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ABSTRACT

This booklet is a compilation of articles on money market instruments which were published in the "Monthly Review" of the Federal Reserve Bank of Richmond from 1964-1967. They have been revised to include recent changes in the various markets, as well as to reflect currently applicable laws and regulations. The articles are titled: The Money Market, Treasury Bills, Tax Anticipation Bills, The Discount Window, Federal Funds, Dealer Loan and Repurchase Agreements, Negotiable Certificates of Deposit, Commercial Paper, Bankers' Acceptances, Federal Agency Securities, and the Euro-Dollar Market. The first article defines the term money market, describes the participants, the interrelation and size of the various market sectors, the market's significance economically, and its relationship with Federal Reserve. The remaining articles treat each of the sections of the market, defining each term, summarizing its history, explaining investment characteristics, administration and mechanics, its advantages, and use. (Author/CK)

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Instruments of the Money Market

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FOURTH EDITION

edited by
Timothy Q. Cook

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Foreword

This booklet is a compilation of articles on money market instruments published in the **Monthly Review** of the Federal Reserve Bank of Richmond at intervals over a period of four years, 1964 through 1967. The articles have been revised to take account of significant changes in the various markets in recent years, as well as to reflect currently applicable laws and regulations.

This edition, like former ones, had the benefit of suggestions from members of the staffs of the Board of Governors and the Richmond Bank. Jimmie R. Monhollon had primary responsibility for the first two editions, and Glenn Picou was responsible for the third edition.

We offer these articles in the hope that they will be a useful supplement to literature in the fields of money and banking and finance.

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The Money Market

by James Parthemos

Economic units, such as banks, other business firms, governmental units, or even individuals, find, as a rule, that their inflow of cash receipts does not coincide exactly with their cash disbursements. The typical economic unit finds that on some days its cash holdings build up because receipts exceed outlays. On other days, it might experience a sharp reduction in cash balances because spending outstrips cash inflow.

One of the most important reasons for holding cash reserves is to bridge the gap between receipts and outlays and to insure that a planned stream of expenditures can be maintained somewhat independently of cash inflow. There are, of course, other reasons for holding reserves. In particular, commercial banks and certain other financial institutions must conform with legal reserve requirements.

Maintenance of cash reserves involves cost, either in the form of interest paid on borrowed balances, or in the form of interest foregone on nonborrowed balances which have not been lent out. For many economic units, especially large firms, these costs can assume significant proportions. To minimize such costs, economic units usually seek to keep their cash holdings at a minimum consistent with their working needs and their legal requirements. This may be done by holding almost riskless and highly marketable income-bearing assets instead of cash and by establishing and preserving their ability to borrow, at very short term, at favorable interest rates. The institution of the "money market" has evolved to meet the needs of such economic units.

THE MONEY MARKET

The term "money market" occurs frequently in financial literature and in financial parlance but is seldom defined. In general, the term applies not to one but rather to a group of markets. In early periods of United States financial history, the term was frequently used in a narrow sense to denote the market for call loans to securities brokers and dealers. At other times in the past, it has been employed broadly to embrace some long-term as well as short-term markets. In current usage, it generally refers to the markets for short-term credit instruments such as Treasury bills, commercial paper, bankers' acceptances, nego-

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tiable certificates of deposit, loans to or repurchase agreements with securities dealers, and Federal funds.

In general, money market instruments are issued by obligors of the highest credit rating, and are characterized by a high degree of safety of principal. Maturities may be as long as one year but usually are of 90 days or less, and as a practical matter can be arranged to span only a few days or even one day. These instruments accordingly involve small risk of loss due to changes in interest rates. Moreover, the market for these instruments is extremely broad and on a given day can absorb a large volume of transactions with relatively little effect on yields. The market also features highly efficient machinery which allows quick and convenient trading in virtually any volume. Unlike organized securities or commodities markets, the money market has no specific location. Like other important financial and nonfinancial markets in this country, it centers in New York, but it is primarily a "telephone" market and is easily accessible from all parts of the nation as well as from foreign financial centers. No economic unit is ever more than a telephone call away from the money market.

The heart of the money market's machinery is composed of numerous "money market banks," including the large banks in New York and other important financial centers; about 34 primary Government securities dealers, some of which are large banks; a dozen-odd commercial paper dealers; a few bankers' acceptance dealers; and a number of money brokers who specialize in finding short-term funds for money market borrowers and placing such funds for money market lenders. The most important of the last-mentioned group are the major Federal funds brokers in New York.

MARKET PARTICIPANTS

Apart from the groups that provide the basic trading machinery, money market participants usually enter the market either to raise funds or to convert temporary cash surpluses into highly liquid interest-bearing investments. Funds may be raised either by borrowing outright, or through selling existing holdings of money market instruments, or through issuing new instruments. The issue and sale of new money market instruments is, of course, a form of borrowing.

Generally, money market rates are below rates on bank loans even for prime borrowers, and the ability to borrow funds on the open market is correspondingly advantageous. The U.S. Treasury, many commercial banks, large sales finance companies, and well-known nonfinancial cor-

porations of the highest credit standing borrow regularly in the money market by issuing their own short-term debt obligations, which comprise the standard money market instruments. Short-term loans to Government securities dealers, loans of reserves among commercial banks, and Federal Reserve loans to commerical banks are also money market instruments although they do not give rise to negotiable paper.

Suppliers of funds in the market are those who buy money market instruments or make very short-term loans. Potentially, these include all those economic units that can realize a significant gain through arranging to meet future cash requirements by holding interest-bearing liquid assets in place of nonearning cash balances. The major participants on this side of the market are commercial banks, state and local governments, large nonfinancial businesses, and nonbank financial institutions such as insurance companies and pension funds. Foreign bank and nonbank businesses are increasingly important suppliers of funds.

By far the most important market participant is the Federal Reserve System. Through the Open Market Trading Desk at the New York Federal Reserve Bank, which executes the directives of the Federal Open Market Committee, the System is in the market on a virtually continuous basis, either as a buyer or as a seller, depending on financial conditions and monetary policy objectives. The System's purpose in entering the market is quite different from that of other participants. As noted in greater detail below, the Federal Reserve buys and sells in certain parts of the money market not to manage its own cash position more efficiently but rather to supply or to withdraw bank reserves. The point of this is to provide appropriate monetary and credit conditions for the country at large. In addition, the Federal Reserve enters the market as an agent, sometimes as a buyer and sometimes as a seller, for the accounts of foreign official institutions and for the U. S. Treasury. Overall, the operations of the Federal Reserve dwarf those of any other money market participant.

INTERRELATION AND SIZE OF THE VARIOUS MARKET SECTORS

While the various money market instruments have their individual differences, they are close substitutes for each other in many investment portfolios. For this reason the rates of return on the various instruments tend to fluctuate closely together. For short periods of time, the rate of return on a particular instrument may diverge from the rest or "get out of line," but this sets in motion forces which tend to pull the rates back together. For example, particular circumstances in the market for com-

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mercial paper may produce a rapid run-up of commercial paper rates, resulting in a relatively large spread between these rates and rates on Treasury bills. Sophisticated traders note the abnormal differential and shift funds from bills into commercial paper, causing bill rates to rise and commercial paper rates to fall. In this way, a more "normal" or usual rate relation is restored. This process, known as interest arbitrage, insures conformity of all the money market rates to major interest rate movements. This is illustrated in the chart which shows a period of generally falling rates and a period of generally rising rates.

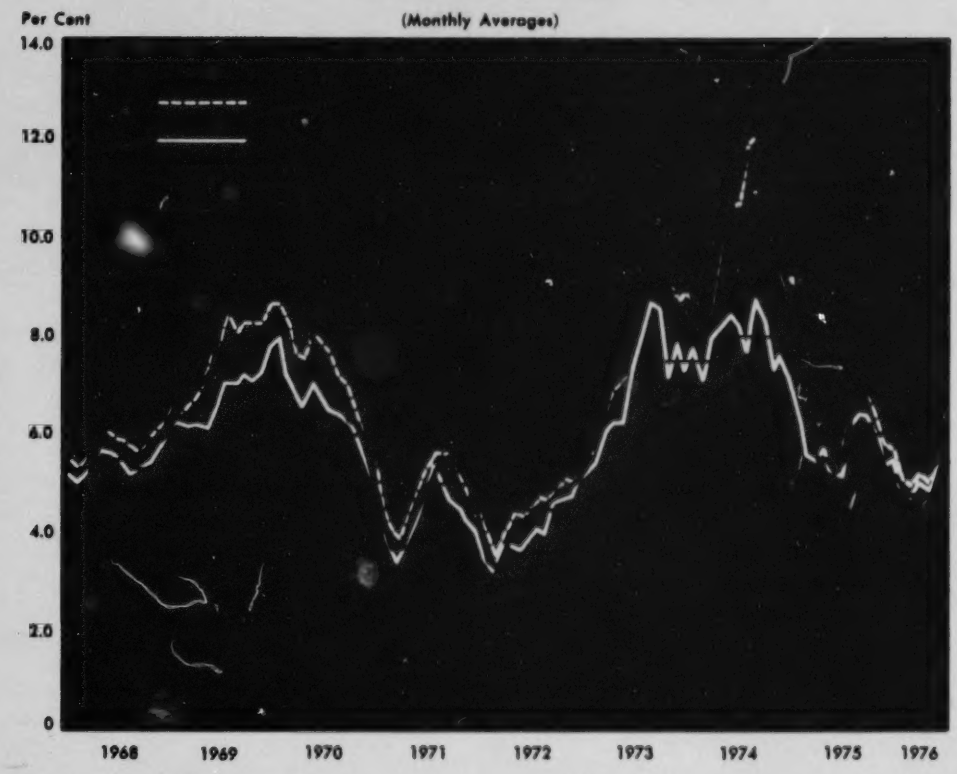
A measure of the relative dimensions of the various money market sectors may be obtained from data on amounts outstanding and/or volume of trading. The table (page 10) suggests that in terms of volume outstanding, short-term Treasury issues constitute the backbone of the money market's stock in trade. Moreover, the characteristics of these instruments make them appropriate for inclusion in a wide variety of portfolios and the daily average volume of trading is very large, exceeded only by daily average transactions in Federal funds. Because of their versatility and huge volume, these short-term Governments can safely be accorded the number one position in the hierarchy of money market instruments. Further ranking becomes highly speculative and will not be attempted.

THE MARKET'S SIGNIFICANCE

For individual economic units, the money market provides an important source of short-term borrowing on advantageous terms. Since there is a continuous flow of loan funds through the market, it is possible for borrowers, through successive "roll-overs," or renewals of loans, to raise funds on a more or less continuous basis and in this fashion to finance not only their immediate cash requirements but also their working capital and some of their other capital needs. By bringing together quickly, conveniently, and to their mutual advantage those units with cash surpluses and those with cash deficits, the market promotes a more intensive use of the cash balances held in the economy and perhaps facilitates real capital formation.

The market is especially important to commercial banks in managing their money positions. To this end, banks in the aggregate are large-scale buyers and sellers of most money market instruments, especially Federal funds. In general, the money market mechanism makes for a more intensive use of bank reserves and enhances the ability of the commercial banking system to allocate funds efficiently. By allowing

MONEY MARKET RATES



Source: Federal Reserve Bulletin.

banks to operate with lower margins of excess reserves, it also makes the banking system more sensitive to central bank policy actions.

Finally, conditions in the money market provide an important guide for monetary policy. The money market is an eminently free and competitive market, and the yields on money market instruments react instantaneously to changes in supply and demand. As a result, the behavior of the market provides perhaps the most immediately available indication of the current relationship between credit supplies and credit demands. Changes in rates on money market instruments, in flows of funds through strategic sectors of the market, in the ability of Government securities dealers to finance their inventories, and other objective money market indicators usually figure importantly in assessments of current credit conditions.

SELECTED MONEY MARKET INSTRUMENTS: VOLUME OUTSTANDING AND VOLUME OF TRADING, DECEMBER 1976

($ millions)

	Volume Outstanding	Volume of Transactions
		(monthly average of daily figures)
U.S. Government securities:		
Treasury bills	163,992	7,511[2]
Other under 1 year	47,043	172[2]
Federal Agencies, within 1 year	29,521	425[2]
Negotiable certificates of deposit	63,300	1,022[2]
Bankers' acceptances	22,523	
Commercial paper placed through dealers	19,625	
Directly placed finance company paper	32,416	
Dealer loans and repurchase agreements	14,032[1]	
Federal funds		25,675[3]

[1] Covers financing only for U.S. Government and Federal Agency securities.

[2] Figures include only transactions of U.S. Government security dealers reporting to the Federal Reserve Bank of New York.

[3] Gross interbank Federal funds purchases of 46 Money Market Banks (average of four statement weeks in December).

Sources: **Federal Reserve Bulletin, Treasury Bulletin,** and Federal Reserve Bank of New York, "Gross Dealer Transactions" release.

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THE FEDERAL RESERVE AND THE MONEY MARKET

The Federal Reserve System influences the money market not only through open market operations conducted at the New York Bank but also through the discount windows of the 12 Federal Reserve Banks. Commercial banks that are members of the Federal Reserve System may borrow temporarily from the Federal Reserve as an alternative to selling money market securities or borrowing Federal funds to cover cash and reserve deficiencies. Similarly, banks with cash or reserve surpluses can repay outstanding borrowings at the Federal Reserve rather than invest the surpluses in money market instruments. Thus, for member banks the Federal Reserve discount window is an operational part of the market mechanism for matching surpluses and deficiencies. For this reason, the Federal Reserve's discount facilities should be considered part of the money market.

Use of the discount window by banks as an alternative to other money market facilities may have important implications for credit conditions. When banks, on balance, add to their borrowings from the Federal Reserve, new bank reserves are created. By contrast, when banks raise money elsewhere in the money market, existing reserves are simply shifted about in the banking system. Thus, in making reserve adjustments, the choice by bankers between the discount window and other parts of the money market can affect the total volume of reserves in the banking system and may alter overall credit conditions in the economy. The relationship between the discount rate, which bankers pay on Federal Reserve borrowings, and other money market rates influences bankers' choices in this regard. Thus, money market developments that affect this relationship can also affect the outstanding volume of bank reserves.

In adjusting their reserve positions, member banks have some limited freedom to move between the discount window and other parts of the money market as suits their advantage. Such shifts between these two sources of funds, of course, tend to bring money market rates into line with the discount rate. For this reason, among others, changes in the Federal Reserve discount rate have important implications for the money market. In recent years, however, there have been prolonged periods during which money market rates have been substantially higher than the discount rate. The differential has been maintained by stringent administration of the discount window.

Of even greater significance for the money market are the daily operations of the Federal Open Market Trading Desk. For many years the

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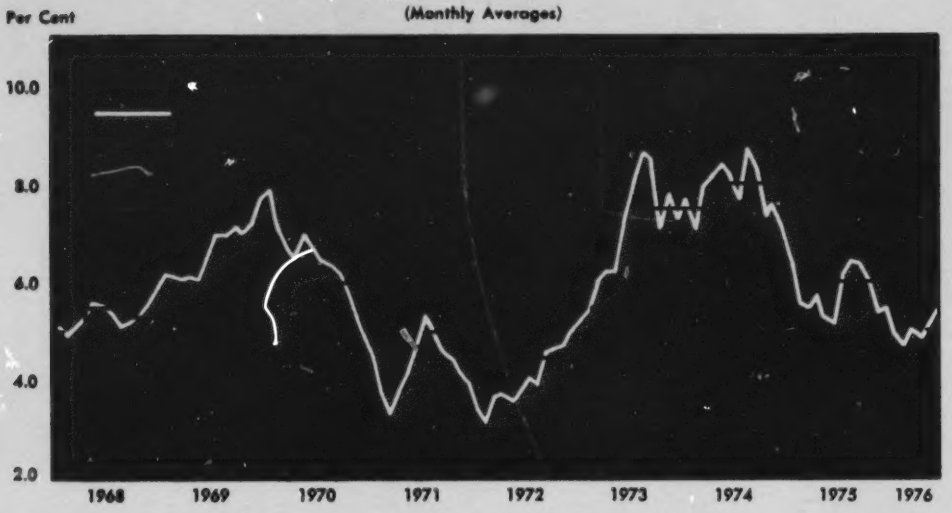
DISCOUNT RATE AND A SELECTED MONEY MARKET RATE



Source: Federal Reserve Bulletin.

Desk has conducted transactions in U. S. Government securities and in bankers' acceptances, and in December 1966 was authorized to conduct operations in Federal Agency issues also. Generally, the Federal Reserve enters the market daily, either to provide new bank reserves through purchases or to withdraw bank reserves through sales. To a large extent, Federal Reserve operations are undertaken to compensate for the movement of other factors, such as float, the Treasury balance, currency in circulation, etc., which affect the volume of reserves held in the banking system. Such operations are undertaken primarily to insure the smooth technical functioning of the market mechanism. But the operations of the greatest importance from the standpoint of the economy are those undertaken to change basic money and credit conditions in the country as a whole. Thus, in addition to its other functions, the money market serves as the mechanism through which the Federal Reserve undertakes to influence basic money and credit conditions.

Treasury Bills

by Jimmie R. Monhollon

For many years Treasury bills have been the single most important money market instrument. Before World War II the amount of these bills outstanding rarely exceeded $2.5 billion. By 1945 the total had risen to over $17 billion, and by June 1976 the outstanding volume was $161.2 billion. Treasury bills, which are the most widely held liquid investment, are an important tool in debt management and in the execution of monetary policy.

WHAT IS A TREASURY BILL?

A Treasury bill is an obligation of the United States Government to pay the bearer a fixed sum after a specified number of days from the date of issue. These debt instruments are sold by the Treasury at a discount through competitive bidding, and the return to the investor is the difference between the purchase price and the face or par value. The rate of return on a Treasury bill of a given maturity is calculated by dividing the discount by par and expressing this percentage as an annual rate, using a 360-day year. For example, a price of $98.940 per $100 of face amount for a 91-day bill would produce an annual rate of return equal to

$$\frac{100-98.940}{100} \times \frac{360}{91} = 4.193 \text{ per cent.}$$

Such a rate of return cannot be compared directly with the yield to maturity of a coupon-bearing issue having 91 days to maturity, since yields to maturity on coupon issues are calculated by using the purchase price instead of par as the divisor and by using a 365- instead of a 360-day year.

Treasury bills are issued in a variety of maturities and denominations tailored to meet the needs of a diverse group of investors seeking both liquidity and income in a single investment. Bills are currently offered on a regular schedule with maturities of 91 days, 182 days, and 52 weeks. The Treasury has also made occasional offerings of tax anticipation bills with maturities that have ranged up to nine months. In addition, the Treasury has at times "reopened" or sold additional amounts of outstanding maturities of bills. Reopenings are almost always for maturities that fall after one of the five major tax payment

dates and, like tax anticipation bills, are designed to help finance the Treasury's requirements until tax payments are received. For this reason reopenings are generally referred to as "cash management" bills. Reopenings have been for bills with maturity dates as far away as 139 days. Usually, however, they are for bills maturing within a month, sometimes as soon as nine days; in such cases, they are often called "short-dated" bills. When the Treasury reopens a series of maturities at one time, as it has done occasionally, the bills sold are called a "strip" of bills. Treasury bills are currently issued in five denominations ranging from $10,000 to $1,000,000, although at times they have been issued in smaller denominations. All may be exchanged at maturity for new issues or redeemed for cash.

HISTORY

In their modern form, U.S. Treasury bills were first offered in 1929. The first issue, for $100 million, was sold in December 1929 and had a maturity of 90 days. From then until 1934, 30-, 60-, and 90-day maturities were offered. Between February 1934 and October 1937 the Treasury experimented with maturities of 182 days to 273 days in order to reduce the frequency with which they had to be rolled over. In 1937, largely at the insistence of commercial banks, the Treasury reverted to exclusive issue of 91-day bills. Then in December 1958 these were supplemented with six-month bills in the regular weekly auctions.

In 1959 the Treasury undertook to establish a pattern of one-year maturities coming due on a quarterly basis. The intial offering was for $2.0 billion, and subsequent offerings ranged from $1.5 billion to $2.5 billion. Replacement of the quarterly auction with a monthly auction of $1.0 billion of one-year bills began in August 1963. In September 1966 the Treasury added a nine-month maturity to the monthly auction of one-year bills. By offering $500 million of nine-month bills, and $900 million of one-year bills instead of the usual $1.0 billion, the Treasury raised $400 million of new money each month. The nine-month cycle was discontinued in late 1972, however, and since then the only regular bill cycles have been for maturities of 91 days, 6 months, and a year. As new money is needed, depending on the size of Federal borrowing requirements, the Treasury has added to the monthly and weekly bill auctions. In the first half of 1976, monthly sales of 52-week bills averaged $3.0 billion. During the same period, the weekly auctions of 13- and 26-week bills ranged from $5 to $7 billion, with about 40 to 45 per cent of that representing 13-week bills.

AUCTIONING NEW BILLS

New offerings of three- and six-month bills are made each week by the Treasury. Ordinarily, subscriptions, or bids, are invited on Thursdays, and the amounts of the offerings are set at that time. The auction is usually conducted on the following Monday, with delivery and payment on the following Thursday.

Bids, or tenders, in the weekly auctions must be presented at Federal Reserve Banks or their branches, which act as agents for the Treasury, by 1:30 p.m., New York time, on the day of the auction. Bids may be on a competitive or a noncompetitive basis. Competitive bids are usually made by large investors who are in close contact with the market. These bids comprise the largest portion of subscriptions on a dollar basis. In this type of tender the investor states the quantity of bills desired and the price he is willing to pay. A subscriber may enter more than one bid indicating the various quantities he is willing to take at different prices. Individuals and other small investors usually enter noncompetitive bids, which are awarded in full up to $500,000 on both the 91-day and the 182-day bills. Noncompetitive awards are sold at the average price of accepted competitive bids.

Subscription books at the various Federal Reserve Banks and branches close promptly at 1:30 p.m., and the bids are then opened, tabulated, and submitted to the Treasury for allocation. The Treasury first makes all noncompetitive awards. The remainder is then allocated to those competitive bidders submitting the highest offers, ranging downward from the highest bid until the amount offered is allocated. The "stop-out price" is the lowest price, or highest yield, at which bills are awarded. Usually only a portion of the total bids made at this price is accepted. The average issuing price, which is usually closer to the lowest accepted price than to the highest, is then computed on the basis of the competitive bids accepted. In the weekly auction of June 10, 1976, for example, bids for the three-month bills ranged from a high of $98.624 per $100 of face amount (equivalent to an annual rate of 5.444 per cent) to a stop-out price of $98.618 (5.467 per cent). A total of $2,309 million of bids were accepted, $445 million of which were noncompetitive tenders accepted at the average issuing price of $98.620 (5.460 per cent).

By bidding noncompetitively, small investors avoid several risks inherent in competitive bidding. In the first place, they do not risk losing their chance to buy through bidding too low. Nor do they run the risk of bidding too high and paying a price near the top. The dollar amount of noncompetitive awards as a per cent of total awards is generally quite

small, usually less than 10 per cent. When market interest rates rise relative to the rates paid at deposit institutions, however, some small investors shift funds out of these institutions into alternative financial assets, such as Treasury bills. This phenomenon, known as "disintermediation," occurred in the late 1960's as market interest rates rose well above those permitted by Regulation Q on time deposits at commercial banks and thrift institutions. As a result, by January 1970 the ratio of noncompetitive to total awards had risen to 32 per cent. In reaction to this development, the Treasury raised the minimum bill award from $1,000 to $10,000. This change was designed to discourage noncompetive bids by small investors in order to retain the Treasury bill as an instrument for attracting large quantities of funds primarily from institutional investors, to reduce the costs of processing many small subscriptions yielding only a small volume of funds, and to discourage the exodus of funds from financial intermediaries and the mortgage market.

The increase in the minimum bill award to $10,000 has not been entirely successful in deterring disintermediation. The ratio of noncompetitive to total awards continues to respond to interest rate movements, especially when rates rise well above Regulation Q ceilings. In September 1974, for example, when the three-month Treasury bill rate averaged 8 per cent, the share of noncompetitive awards in the 13- and 26-week auctions averaged 20 per cent.

In addition to the weekly auctions, monthly auctions are held for the 52-week bills and special auctions are held for short-dated bills, for other reopenings of outstanding maturities, and for tax anticipation bills. The auction procedure for these bills is similar to the regular weekly auctions of 91- and 182-day bills except that banks are sometimes permitted to make payment for tax bills by crediting their Treasury Tax and Loan Accounts.

ADVANTAGES OF AUCTIONS

Treasury bills are marketed by the Treasury solely through the auction technique. Treasury notes and bonds, however, are sold either using the auction technique or through subscriptions. Under the latter method the Treasury sets a price on the new issue and then receives subscriptions which are allotted completely and/or in part. Prior to sales of certificates, notes, and bonds, the Treasury discusses market conditions with representatives of the Federal Reserve System, Government securities dealers, and investor groups in order to assess the existing de-

mand. An attempt is made to approximate how much the market can absorb in various maturity areas without disrupting price and yield relationships in the market as a whole. Only after such study does the Treasury decide what maturities and how much of each it will offer and what interest rates it will set. Decisions on interest rates are usually delayed until just before the financing is announced in order to appraise the mood of the market more exactly. Otherwise, interest rates might be selected which would either prove unattractive to investors or, conversely, provide them a windfall gain at the Treasury's expense. Under the auction method the Treasury takes the same care to assess market conditions. After doing so, however, it sets a coupon rate on the note or bond and sells the planned amount at the price range necessary to induce investors to purchase the desired amount. Consequently, the actual yield will be greater or less than the coupon rate depending on whether the security is sold at a price below or above the par value.

In general, the auction method is simpler and less time-consuming than the more involved subscription method. In auctions the market establishes a price, making it unnecessary for the Treasury to second-guess market conditions. Also, auctions eliminate the problems associated with oversubscriptions or undersubscriptions. The Treasury merely sets the amount of the offering and the market does the rest. For these reasons the Treasury in recent years has used the auction method not only for bills but also for most new longer-term issues, although it has continued to use periodically the subscription method when it needs to raise large amounts of new money.

Successful use of the auction technique presupposes a market of great depth and breadth. In periods of general market weakness, the market for long-term securities may be so thin that an offer of several hundred million dollars of new securities can not be absorbed without serious price reductions, i.e., yield increases. By contrast, the bill market is enormous and can absorb billions of dollars of new bills with only minimal impact on yields. The great popularity of the Treasury bill as a short-term liquid investment among banks, other financial institutions, nonfinancial corporations, state and local governments, and other investors underlies this characteristic of the bill market. It is largely because of this characteristic that the auction technique is especially suited to Treasury bills.

From the Treasury's standpoint, bill auctions provide an eminently convenient means of raising new cash. As noted above, the Treasury can

raise large amounts of new money without upsetting the market and with a minimum of administrative cost. Also, the auctions provide the debt managers with a very flexible tool. When, for example, the Treasury needs new money and the total marketable public debt is close to the statutory limit, it can enter the market quickly and raise small amounts by adding to the supply of bills in the weekly auction. Conversely, it can squeeze under the debt ceiling by allowing bills to run off, that is, by failing to replace the full amount coming due.

Advantages also accrue to investors. Bill auctions are now part of the regular routine of the money market and as such have a minimum impact on investment values. They provide short-term investors with a predictable supply of highly liquid assets in a wide range of maturities.

RELATION TO MONETARY POLICY

Treasury bills perform an important role in the implementation of monetary policy since the Federal Reserve System influences the reserve positions of commercial banks primarily through the purchase and sale of bills. The Federal Reserve's purchases supply reserves to the banking system, and their sales have an opposite effect. While the Federal Reserve can and does operate outside the bill area, as a practical matter most of its purchases and sales must be concentrated in short maturities, principally Treasury bills. In an absolute sense, Federal Reserve transactions are very large and such operations in the relatively thin long-term market would result in wide swings in prices and yields.

INVESTMENT CHARACTERISTICS

Apart from their significance in the implementation of policy, Treasury bills comprise an important element in the general public's assets structure. The private sector's great demand for these bills is attributable chiefly to their high degree of liquidity or "nearness to money." Financial and nonfinancial institutions often find themselves with idle cash balances which may have been built up for payment of taxes or other outstanding debts, or as reserves against any of numerous contingencies. Often it is expedient to put such balances into short-term investments which can earn interest and which can be readily converted to cash with little risk of loss.

Treasury bills neatly fill these requirements. The highly organized market for bills insures their easy convertibility into cash and decreases the risk of loss should the investor need cash before the maturity of the bills. Their short maturities minimize the risk from price fluctuations associated with changing market conditions. Available in the market are

dates and, like tax bills which range in maturity from a week or less to one year, and which are therefore appropriate to a variety of short-term investment needs. Moreover, yields on bills are generally competitive with other short-term investments.

Since Treasury bills meet so fully the requirements of a short-term investment, they constitute an important part of commercial banks' "secondary reserves." Through purchase of bills, banks can quickly convert excess reserves into earning assets with little loss of liquidity. Through sales, they can promptly acquire additional funds for lending or for meeting legal reserve requirements.

While selling Treasury bills is a highly convenient way for banks to raise cash, "turnaround" costs may make such sales a relatively unattractive way to cover very short-term reserve needs. Turnaround costs are the costs involved in selling bills one day and buying the same amount of bills back at a later date. In addition to incidental transaction costs such as phone calls and paper work, there are costs which arise because market dealers buy bills at a price slightly lower than the price at which they sell, the spread between the two prices representing their gross profit. Thus, if interest rates do not change, a bank seeking to raise funds for only one day would sell bills at a given price and buy them back the following day at a slightly higher price, simply because of the spread between bid and asked quotations. The typical dealer spread on actively traded Treasury bills, such as the current three- and six-month bills, is 2 to 4 basis points. Four basis points is equivalent to about $0.01 on each $100 par value of three-month bills. Thus a bank would have to pay one cent per $100 more than it received to sell bills one day and buy them back the next. Under such circumstances, the turnaround cost would be one cent per $100, or 3.65 per cent per year, and this cost would be in addition to the loss of interest on the bills. An alternative means of covering the one-day reserve need, say through borrowing Federal funds, would probably prove less costly. In terms of per cent per annum, turnaround costs of bill trading decline sharply the greater the time span between sale and repurchase, since the given cost of one cent per $100 is spread over more days. At the rates used in this example, a one-week turnaround would involve a cost of 0.52 per cent per annum. Thus, the attractiveness of bill sales as a means of raising funds varies with the time over which the funds are needed.

Bank holdings of Treasury bills typically vary seasonally and cyclically. When business is slack and loan demand is shrinking, banks

generally turn to Treasury bills as a temporary investment outlet. Conversely, when business is expanding and loan demand is increasing, banks generally liquidate bills in order to expand loans.

Treasury bills are also important to corporations as a temporary investment and a potential source of ready cash. Rising interest rates in the postwar period have induced corporate treasurers to economize cash balances and to seek liquidity, where possible, in income-earning assets. In managing their cash positions, many corporate treasurers have become increasingly sophisticated in projecting future cash flows. Frequently they time the maturities of their short-term investments to coincide with future cash needs. On occasion, however, unforeseen cash needs arise and it becomes necessary to raise money in a hurry. For these purposes, Treasury bills are ideally suited. Bills are an equally advantageous investment for state and local governments in the management of their general funds and retirement funds.

According to the June 1976 Treasury Survey of Ownership, United States Government investment accounts together with the Federal Reserve Banks constituted the largest holder of bills. Other large holders are commercial banks, nonfinancial corporations, state and local governments (general funds), and foreigners.

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Tax Anticipation Bills

by Jane F. Nelson

In October 1951 the Treasury added a new variety of Treasury bill to its kit of debt management tools. This bill was designed specifically to help the Treasury smooth out its uneven flow of tax receipts while providing corporations with an attractive investment for funds accumulated for tax payments—hence the name, tax anticipation bills. When submitted in payment of taxes, these bills are accepted at par on the tax date. Actually they mature a week later, usually on the 22nd of the month. Of course the bills do not have to be used in lieu of tax payments, and some investors choose to hold them to maturity. Unlike other Treasury bills, tax anticipation securities are not offered on a regular basis, such as weekly or monthly, but are coordinated with the Treasury's estimates of cash income and outgo. The number of issues per year from 1951 through 1974 varied between one and seven. There were no new issues of tax anticipation bills, however, in 1975 and 1976.

Between 1953 and 1958, the Treasury also designated nine certificates of indebtedness as "tax anticipation" securities. Like Treasury bills, certificates are required by statute to mature within one year from the issuing date, but they bear a fixed rate of interest, whereas bills are sold at a discount and are redeemed at par. Although Treasury bills are now used for all tax anticipation financing, certificates were used frequently in the past when the Treasury felt that the amount to be raised was too large for the auction technique. Consequently, tax anticipation issues which exceeded roughly $2.5 billion were generally undertaken through certificate, rather than bill, sales.

SCHEDULE OF TAX PAYMENTS

The five major corporate tax payment dates fall in the middle of March, April, June, September, and December, and the largest payments are generally made in June. The major date for payment of nonwithheld individual income taxes is in April. Since two of the five major tax dates fall in the April-June quarter of the year, that quarter generally registers a budget surplus that offsets or partially offsets budget deficits in the other three quarters. For instance, in the first three quarters of fiscal year 1969 (July 1968 through June 1969), deficits of $3.2 billion, $7.1 billion, and $2.0 billion were registered, which were completely offset by a

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surplus of $15.5 billion in the fourth quarter. In fiscal year 1972 (July 1971 through June 1972) deficits of $7.8 billion, $10.1 billion, and $10.5 billion in the first three quarters were partially offset by a $5.6 billion surplus in the fourth quarter. Because of this pattern, tax anticipation bills have generally been sold in the period from July through March and a disproportionate amount have been scheduled to mature in the April-June period. Of the 22 issues of tax anticipation bills over the 1970-74 period, 17 were sold in the July-December period and 5 were sold in the January-March period. None were issued in the April-June period.

By offering to pay interest on advance tax payments, the Treasury is able to collect a portion of corporate taxes ahead of the actual payment dates. From the corporations' point of view, tax funds accrued prior to the tax date represent cash which should be profitably invested, if possible, before being surrendered to the Government. A corporate treasurer has many choices in investing funds destined for tax payments. These include tax anticipation bills, regular Treasury bills, commercial and finance company paper, certificates of deposit, bankers' acceptances, or Government securities bought under repurchase agreements with dealers. Tax anticipation bills offer all the advantages of regular Treasury bills: namely, no risk of default, an active and continuous market, and short maturities which make them relatively free from risk of loss if sold before maturity. In addition, as mentioned previously, they may be submitted in payment of taxes at par one week prior to maturity, though this advantage is normally at least partially reflected in a higher price and lower yield in the market.

CHARACTERISTICS

The great majority of the $159.4 billion of tax anticipation bills issued from 1951 through 1974 were scheduled to mature in March, April, and June. Of the 83 tax bill auctions carried out through 1974, 19 were scheduled to mature in March, 17 in April, and 36 in June; only 9 were scheduled to mature in September and 2 in December. Maturities of individual bill issues have ranged from 23 to 286 days, with 177 days the average length. Prior to 1975 and 1976, when none were issued, the volume of tax anticipation bills issued annually ranged from a low of about $800 million in 1953 to almost $13 billion in 1969.

Like regular Treasury bills, tax anticipation bills are sold at a discount in a competitive auction. The Treasury determines the amount to be sold, and the price and allotments are established by the bidding.

Unlike regular bill auctions, however, any bank qualifying as a depositary usually has been allowed to pay for all or part of the bills allotted to it for itself and its customers by crediting the tax and loan account which it holds for the Treasury. When such privileges are granted (as they were for every new issue prior to 1962), the value of the deposit is directly reflected in the banks' aggressively high bids, resulting in low yields. Whereas tax anticipation bills which are sold without tax and loan credit will usually bear rates within a few basis points of outstanding Treasury bills of comparable maturity, those sold with tax and loan privileges may carry rates 15 to 30 basis points below those of comparable bills. (A basis point is one-hundredth of 1 per cent.) Banks have apparently found that the Treasury deposits acquired in this manner are profitable enough to offset the subsequent selling of most of their awards at prices below those originally paid. Between 1962 and 1965 the Treasury disallowed tax and loan credit on six out of ten issues in order not to aggravate the U.S. balance of payments situation by placing downward pressure, even for a short time, on short-term interest rates. In 1966 tax and loan credit privileges were extended on five issues but were denied in the December auction due to the Treasury's immediate need for cash. At that time the Treasury was pinched for funds because the debt stood almost at the legal ceiling, and borrowing had to be on a very small scale. Since 1966, full tax and loan privileges have been extended on all but six tax bill issues.

TAX AND LOAN ACCOUNTS

Tax and loan accounts are a depositary system authorized by Congress to supplement the Treasury's account at Federal Reserve Banks. They are an outgrowth of the War Loan accounts established during World War I to facilitate management of the increased volume of Treasury financing. By pledging certain securities as collateral and upon recommendation by the District Federal Reserve Bank, any bank or trust company may be designated by the Secretary of the Treasury as a Special Depositary. These banks are then eligible to qualify as depositaries for Federal taxes and may receive deposits of corporate, personal, and social security taxes, up to the amount for which they are authorized. Originally, the purpose of the system was to permit the special depositaries to hold for a time the very large amounts paid in for Government bonds during the large war loan drives, rather than requiring the banks to remit the entire amount to the Reserve Banks, which would have drastically depleted reserve accounts. The banks do not pay inter-

est on these balances, but neither do they charge the Treasury for the services they perform for it.

The major benefit of tax and loan accounts is that, when used, they minimize the impact of Government financing operations on bank reserves and, hence, on money market conditions. For instance, when taxes are collected or securities sold to the public to finance Federal deficits, deposits are shifted from the public to the Treasury, which has the option of keeping them in tax and loan accounts or transferring them to its accounts at the Federal Reserve Banks. If they are retained in tax and loan accounts, there is little impact on bank reserves. If, on the other hand, they are shifted to the Federal Reserve Banks, aggregate commercial bank reserves decline. In the absence of Federal Reserve action to offset this decline, upward pressure would be put on short-term interest rates as individual banks took actions—such as liquidating short-term securities—to rebuild reserves. Of course, to offset these effects the Federal Reserve can supply reserves to the banking system through open market operations. To do so, however, expands and can complicate the daily operations of monetary policy.

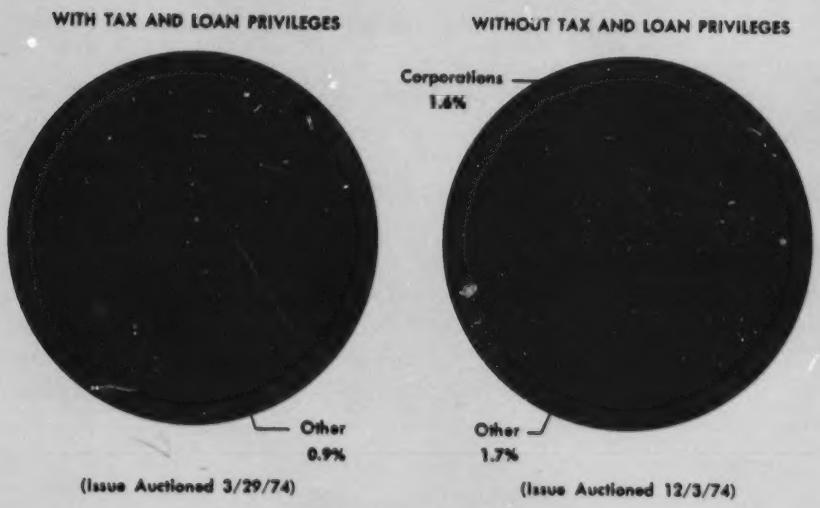
Despite the advantages of tax and loan accounts, the Treasury in 1972 began to reduce systematically the proportion of its total balance held in these accounts, keeping these funds instead at the Federal Reserve Banks. This trend accelerated in 1974 and by December 1975 the Treasury held only 13.7 per cent of its total balance in tax and loan accounts, compared to 84.2 per cent in June 1971. The reasons underlying the Treasury's decision to reduce its tax and loan account balances are provided in detail in the Treasury's 1974 "Report on a Study of Tax and Loan Accounts." This was the third of a series of studies designed to measure whether the implicit costs to the Treasury of holding interest-free balances in tax and loan accounts were offset by the value of services rendered to the Treasury by banks that handled those accounts. The two earlier studies, done in 1960 and 1964, had concluded that the costs were indeed more than offset by the value of services provided by banks. The 1974 study, however, came to the opposite conclusion for three reasons. The first two were the higher level of interest rates and larger levels of tax and loan accounts, both of which significantly increased the Treasury's estimate of the implicit cost of holding balances in tax and loan accounts. The third factor cited in the 1974 study was the decline in the value of services to the Treasury relative to the value calculated in the earlier studies. This decline was due to both a reduction in the

number of services to which the Treasury was willing to attach value and a decrease in the level of some services to which the Treasury continued to attach value, such as handling subscriptions for new Treasury issues without a fee.

While coming to the conclusion that the implicit costs of tax and loan accounts had risen well above the value of related services provided by banks, the Treasury's 1974 study reaffirmed the desirability of the use of tax and loan accounts as a method of reducing the impact of Government financing operations on the distribution and level of bank reserves. Consequently, the study concluded that the best procedure would be to continue to hold its balance in tax and loan accounts, but in an interest-bearing form. Three possible ways in which this could be accomplished were outlined in the 1974 study. None of these were possible, however, because of legal reasons; as of 1976, that continued to be the case. As a result the Treasury's study concluded that, as the next best solution, the Treasury should intensify its efforts to decrease its balance in tax and loan accounts. If future developments make it possible to earn interest on tax and loan accounts, a reversal of this trend can be expected.

The decline in the relative importance of tax and loan accounts has had a major impact on the movement in bank reserves and on Federal Reserve behavior designed to offset this movement. As indicated above, the movement of deposits from the commercial banking system to the Federal Reserve System—as now occurs, for instance, when the Treasury collects taxes or sells securities to the public—causes a decline in bank reserves. In order to offset this movement in reserves, the Federal Reserve in recent years has had to expand greatly its "defensive" open market operations. In fact defensive operations to offset the reserve impact of movement in deposits from and to the Treasury's balance at the Federal Reserve Banks has become by far the most important cause of Federal Reserve actions in the money market. Increases or decreases of billions of dollars in the Federal Reserve's holdings of securities over a short period of time have become common. To cite a fairly extreme example, in the first two weeks of April 1976 the Federal Reserve's holdings of U.S. securities decreased by $5.2 billion. In the subsequent two weeks, as tax payments caused a sharp rise in the Treasury's deposits at Federal Reserve Banks, the Federal Reserve System's holdings of U.S. securities rose by $4.8 billion. There is little evidence as yet that the greatly increased need for defensive open market operations has hindered the Federal Reserve's ability to control bank reserves and, hence, the monetary aggregates.

AUCTION AWARDS OF TAX ANTICIPATION BILLS



DISTRIBUTION OF OWNERSHIP

DECEMBER 31, 1973

Source: Treasury Bulletin.

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UNDERWRITING AND OWNERSHIP

Since 1959, the year in which the most complete data became available, commercial banks have been the principal underwriters of tax anticipation bills. Of the $126.8 billion of bills auctioned from 1960 through 1974, commercial banks purchased 90 per cent. When issues which carry tax and loan privileges are separated from those which disallow such credit, a striking pattern emerges in the allocations. Banks typically underwrite a much larger fraction of bills which can be paid for by crediting tax and loan accounts. For example, in 1963, when no tax and loan privileges were allowed, commercial banks received 44 per cent of total allotments during the year, with corporations receiving 24 per cent, and dealers and brokers 30 per cent. In 1968, however, when 100 per cent tax and loan credit was allowed on each issue, commercial bank allotments averaged almost 99 per cent of total awards. This pattern is illustrated in the pie charts which depict two auctions in 1974, one with tax and loan privileges and one without. Data on the ownership of tax anticipation bills indicate that commercial banks hold their sizable auction awards only temporarily. Since 1960 their year-end holdings have averaged only about 20 per cent of the total outstanding.

The Treasury's decision to maintain its tax and loan account balances at a minimal level decreases the incentive effect of allowing banks to purchase tax anticipation bills by crediting their tax and loan accounts, since increases in these accounts are rapidly transferred to the Treasury's accounts at the Federal Reserve Banks. As a consequence tax anticipation bills are probably not as attractive a financing tool as they were in earlier years.

CASH MANAGEMENT BILLS

The decline in the use of tax anticipation bills in 1975 and 1976 was paralleled by an increase in the use of a financing tool called "cash management" bills. These bills represent "reopenings" or sales of additional amounts of outstanding maturities of bills. Nine issues of cash management bills were sold in the 1975-1976 period. These bills usually have maturities that fall after one of the five major tax dates and, like tax anticipation bills, are designed to help finance the Treasury's requirements until tax payments are received. The maturities of cash management bills have ranged from 9 to 139 days, although most issues have had maturities of less than a month. These very short-term cash management bills are often referred to as "short-dated" bills.

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The Discount Window

by James Parthemos

For bankers, the money market is important primarily as a focal center through which adjustments in their reserve positions are worked out. Member banks can make the same adjustments by borrowing at the discount window of their Federal Reserve Bank. Thus, a bank suffering an unexpected reserve loss can bring its reserve position back to the desired level by arranging a discount or advance at the Federal Reserve. Similarly, a bank experiencing a temporary buildup of reserves beyond desired levels may, before placing any funds in the money market, pay off any borrowings it may owe at the Federal Reserve. In any event, the Federal Reserve discount window affords to member banks an additional recourse in working out reserve adjustments and, from the standpoint of these banks, may be properly viewed as an operational part of the money market.

Reserve adjustments via the discount window differ in one important respect from adjustments effected in the money market proper. Trading in such instruments as Treasury bills, bankers' acceptances, and Federal funds among commercial banks or between commercial banks and their customers involves no net creation of new bank reserves. Rather, existing reserves are simply shifted about within the banking system. On the other hand, when borrowings or repayments at the discount window result in a net change in Federal Reserve credit outstanding, the volume of bank reserves is affected. Thus, the choice by individual banks between the discount window and alternative means of reserve adjustment may influence the availability of credit and money in the economy at large.

Bankers' decisions to use the discount window or other segments of the money market for making reserve adjustments depend on the level of the Federal Reserve's discount rate relative to yields on money market investments, on institutional peculiarities in the several parts of the money market, and on legal and administrative arrangements regarding use of the discount window.

EARLY DISCOUNTING PRINCIPLES

Originally, the most important single function of the Federal Reserve System was to provide a pool of funds which could be drawn on by banks experiencing reserve difficulties. The ability of banks to draw on this

pool, however, was not envisaged as an absolute right. Rather, it was linked to a widely held theory of commercial banking which is known to monetary students as the commercial loan or "real bills" principle. According to this doctrine, commercial banks should be allowed to borrow only against short-term, "self-liquidating" paper arising from the normal conduct of legitimate business. To insure adherence to this principle, member banks were initially permitted to borrow only by rediscounting customer loans which met certain closely specified conditions based on the commercial loan theory. Promissory notes and other credit instruments meeting these specifications were defined as "eligible paper," that is, paper eligible for rediscount at the Federal Reserve.

By and large, the commercial loan principle dominated member bank use of the discount window until the banking crisis of 1933. During the 1920's trading in such money market instruments as short-term Government debt and Federal funds was not nearly so well developed as at present. While banks made extensive use of bankers' acceptances, commercial paper, and call loans against stock exchange collateral for reserve adjustment purposes, they also relied heavily on the discount window. Many bankers made it a regular practice to hold a supply of eligible paper which would be readily available for reserve adjustment through the discount window. Throughout the 1920's, average daily borrowings at the discount window usually exceeded $500 million and at times amounted to more than twice that figure.

FROM THE 1930'S TO THE ACCORD

The banking reforms of the 1930's incorporated features designed to encourage use of the discount window by banks. In some measure, these features were related to a growing conviction that the commercial loan principle and the eligibility requirements unduly restricted banks in their efforts to secure central bank assistance in times of stress. The effect of the reforms was to sweep away the real bills basis for discounting, although the concept of eligible paper was retained in the language of discount regulations.

At an early stage in Federal Reserve history, member banks were allowed to borrow on their own notes, secured by eligible paper or Government securities, instead of by rediscounting customer paper. Since 1933 direct advances against Government securities have accounted for most Federal Reserve lending. In addition, banking legislation of the 1930's incorporated a new section, 10(b), into the provisions of the Federal Reserve Act, authorizing Federal Reserve loans to member

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banks against any collateral satisfactory to the lending Reserve Bank.

Despite the encouragement of these changes and of low discount rates, banks used the discount window sparingly between 1933 and 1951. From 1935 to 1940 daily borrowings generally averaged below $10 million. For the most part, banks held large excess reserves and were under little pressure to borrow. Even after the business recovery of the early 1940's, borrowing remained at low levels. By that time, banks held large quantities of Government securities and the Federal Reserve's practice of pegging the market for these securities, instituted in 1942, eliminated the market risk of adjusting reserve positions through sales of Governments. The Treasury-Federal Reserve Accord in the spring of 1951, however, ended the pegged market for Government securities and began a new chapter in the history of the discount window.

DISCOUNTING SINCE THE ACCORD

Prices of Government securities fluctuated over a broader range after the Accord, and it became riskier for banks to rely on these securities as a source of reserves when adjustments were necessary. Consequently, banks began to reassess the relative attractiveness of the discount window. Partly for this reason, borrowings jumped sharply, reaching the $1.0 billion level in mid-1952 for the first time in more than 20 years. For most of the 1950's borrowings were at levels comparable in absolute (though not in relative) terms with those of the 1920's.

The renewed importance of the discount window, coming in an overall economic and credit environment quite different from that prevailing in the 1920's, suggested the need for a general review of the principles on which the discount privilege was based. In 1955, after an extended inquiry, the Board of Governors promulgated a major revision in its Regulation A, which sets forth the ground rules under which member banks use the discount window today. As embodied in Regulation A, administrative restrictions on use of the discount window relate to the broader aspects of the Federal Reserve's operations rather than to any particular banking theory. For example, Regulation A recognizes that borrowing by member banks creates new reserves and, unless subject to some restraint, could conflict with broader programs to achieve such national goals as economic and price stability. It also recognizes the necessity for insuring that the public resources administered by the Federal Reserve are used not to support questionable banking practices but rather to insure continuity of effective banking services to the public.

Generally, Regulation A envisages use of the discount window as a temporary expedient open to member banks facing reserve adjustments necessitated by the workings of a dynamic economy. Thus, reserve needs occasioned by extraordinary seasonal swings in credit demand or in deposits may give rise to "appropriate" borrowing. Similarly, reserve problems associated with emergency situations affecting a community or a region, or with local or regional secular change, provide appropriate reasons for borrowing.

Continuous borrowing at the discount window is considered "inappropriate," whatever its purpose. Continuous discounting by an individual bank suggests use of central bank funds as a supplement to the borrowing bank's capital resources. It also implies that the borrowing bank has permanent reserve difficulties that should be corrected through basic portfolio adjustments. Regulation A enumerates other specific purposes for which use of the discount window is inappropriate. These include borrowing to obtain tax advantages, to profit from interest rate differentials, and to finance speculation in securities, real estate, or commodities.

Within the constraints embodied in Regulation A, the discount window is open to member banks in a variety of situations that may be considered more or less normal to commercial bank operations. For example, resort to the discount window for temporary aid in working out portfolio adjustments to meet especially meritorious local credit demands is also viewed as appropriate. More generally, as long as a bank demonstrates in its overall performance its intention to operate within the limits of its own resources, it can usually arrange temporary accommodation to cover a variety of problems.

In the fall of 1966, the provisions of Regulation A were supplemented for a brief time with special provisions designed to encourage banks to alter their lending and investing policies. This use of the discount window as a means of selective control was an attempt to cope with an unusual situation. Interest rates were rising very rapidly, participants in the markets for fixed income obligations talked of the possibility of disorderly conditions, financial intermediaries were losing funds, and the flow of mortgage money had virtually stopped. At the same time, banks were expanding their loans, particularly business loans, at an unusually rapid pace, contributing to inflationary pressures. On September 1, 1966, the Presidents of the Federal Reserve Banks dispatched a letter to all member banks stating that banks that would respond to the pressures of tight

monetary policy by adjusting their reserve positions through reduction of loan growth instead of through liquidation of securities in already jittery markets could qualify for longer-than-usual accommodation at the discount window. By December the unusual circumstances which prompted the September 1 letter had passed, and on December 27 the provisions of that letter were formally rescinded.

In April 1973 Regulation A was revised to permit less restricted use of the discount window for seasonal borrowing. Short-term access to the discount window had, of course, been available to member banks experiencing unusually strong seasonal reserve needs. In many instances, however, prolonged seasonal swings made it difficult for member banks, particularly smaller banks with limited access to national markets, to meet the need for funds through reasonable use of their own resources. The revision in Regulation A was designed specifically to assist those member banks that lacked reasonable access to national money markets in meeting seasonal needs arising out of expected patterns in deposits and loans.

Under the 1973 revision in Regulation A, a member bank could obtain Federal Reserve credit to assist it in meeting seasonal needs exceeding 5 per cent of its average annual deposits. In order to qualify for the seasonal borrowing privilege, the bank had to provide the Federal Reserve with sufficient advance evidence to indicate that the seasonal need would persist for at least eight consecutive weeks. The seasonal borrowing program initiated in 1973 was available only to banks with deposits of less than $250 million. Furthermore, member banks were not permitted to use the seasonal borrowing privilege and at the same time have net sales of Federal funds.

In August 1976 new revisions were made to Regulation A to liberalize the seasonal borrowing privilege. Under the revised regulations member banks can use the seasonal borrowing privilege to meet that part of their seasonal need for funds exceeding 4 per cent of their first $100 million of deposits the previous year; 7 per cent of their second $100 million; and 10 per cent of any deposits over $200 million. The period over which the seasonal need must persist was lowered from eight to four weeks and banks with deposits as great as $500 million, rather than $250 million, were made eligible for the seasonal borrowing privilege. In addition, the regulation was revised to allow net sales of Federal funds while banks are engaged in seasonal borrowing from the Federal Reserve; banks cannot, however, use the seasonal borrowing privilege to expand their net sales

of Federal funds. The 1976 revision was made in recognition of the growing number of small banks that use the Federal funds market as a permanent source of liquidity.

Since the initiation of the seasonal borrowing program in 1973, seasonal borrowing has in each year been heaviest in the period from July through October. The magnitude of seasonal borrowing has also moved with the overall state of credit demand in the economy. In 1973 and 1974, when there was aggressive competition for bank loans, seasonal borrowing averaged $88.6 million and $84.8 million, respectively. In 1975 and 1976, however, when loan demand in general plummeted, average seasonal borrowing fell sharply to $23.3 million and $18.3 million, respectively.

ADMINISTRATION OF THE WINDOW

Currently, most Federal Reserve loans to member banks are made under the provisions of Section 13 of the Federal Reserve Act and are in the form of direct advances secured by Government obligations. Advances under Section 13 can also be made against eligible paper, which includes a variety of commercial, agricultural, and industrial paper, bankers' acceptances and other bills of exchange, construction loans, and factors' paper. The use of eligible paper as collateral was negligible in most of the postwar period, but there was a revival of interest in its use beginning in 1966 due to the diminished availability of Government securities collateral at banks.

Loans under Section 10(b), which may be secured by any collateral satisfactory to the lending Reserve Bank, are relatively unimportant in current discount activity. In part, this is because the rate charged on 10(b) loans is 1/2 percentage point higher than on Section 13 loans. Moreover, depending on the collateral offered, 10(b) loans may involve some delay. Banks borrowing under this Section usually have done so as a last resort and have offered chiefly municipal securities as collateral.

Maturities of up to 90 days are authorized on Section 13 loans, while the statutory limit on 10(b) maturities is four months. In practice, however, borrowings under either section are almost always for a maximum of 15 days. Notes may, of course, be paid in part or in full before maturity, in which case unearned discount is rebated. Unless the Federal Reserve is notified to the contrary, the amount due on the note is automatically charged against the borrowing bank's reserve account on the maturity date.

MECHANICS OF BORROWING

In order to borrow, a member bank must furnish the Federal Reserve Bank a certified copy of a resolution adopted by its Board of Directors specifying which of its officers are authorized to borrow on its behalf. Signatures on all notes submitted by a borrowing bank are checked against the bank's resolution and against the signature list held by the Bank Accounts Department of the Reserve Bank.

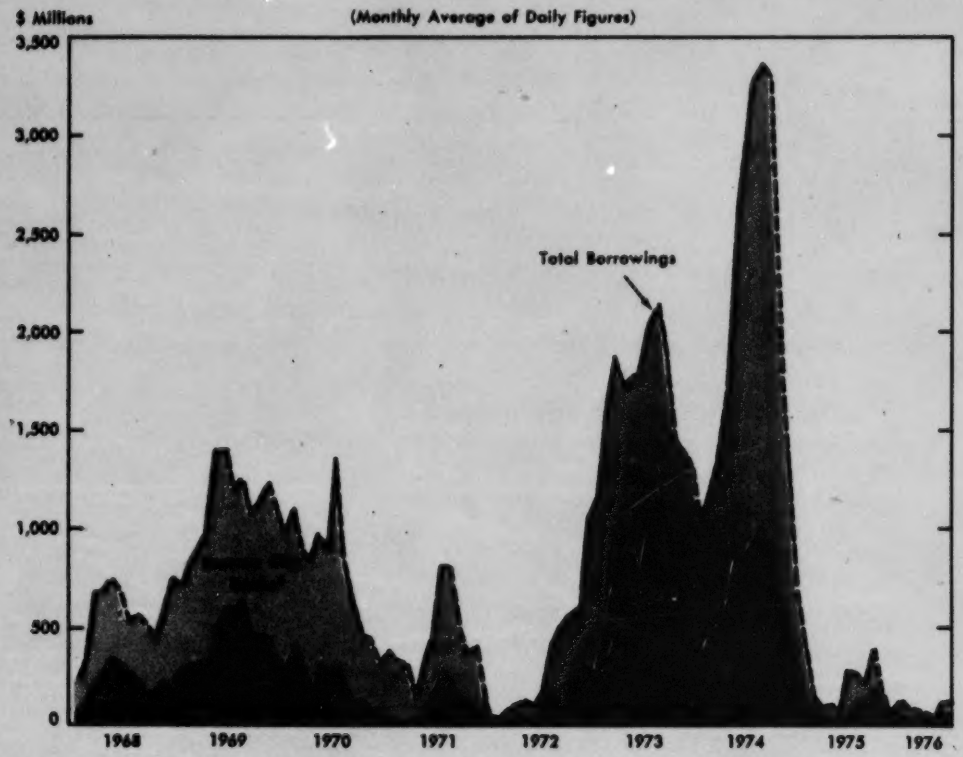
The type of borrowing most convenient for both the member bank and the Reserve Bank is the direct advance on a promissory note secured by direct obligations of the U. S. Government and by certain fully guaranteed Federal agency issues. To borrow on Government obligations, the member bank must execute an application and note, both of which must be received by a Federal Reserve Bank on or before the day of the borrowing. Any bank which wishes to do so may leave with the Reserve Bank a supply of signed notes with the dates and amounts left blank, to be filled in upon telephone requests of authorized officers of the member bank, followed by written confirmation. Loans on Government obligations are made for the face amount of the collateral. The collateral must be held by the Federal Reserve Bank unless prior arrangements have been made permitting another member bank to hold the securities under a custody receipt arrangement. Under such an arrangement the securities may be held by a member bank which in the usual course of business performs correspondent bank services, including the holding in custody of Government securities, for the borrowing bank.

While member banks may also rediscount eligible paper or borrow on their promissory note secured by eligible paper, this procedure is more time-consuming since the Reserve Bank must verify the eligibility of the collateral, then analyze and value it. Member banks, therefore, often submit eligible paper collateral in advance of the date of the borrowing. In 10(b) applications processing is prompt when municipal securities are offered as collateral, but delays may result when customer notes are offered.

BORROWING LEVELS

The volume of borrowings at the discount window fluctuates over a wide range, as shown in the chart. Both small and large banks use the discount window, but in most recent years large (Reserve City) banks have accounted for the greater dollar volume of borrowings. Borrowings generally increase in periods of rising interest rates and decline in periods of falling interest rates. To a large extent this is because, in recent

MEMBER BANK BORROWINGS AT FEDERAL RESERVE BANKS[1]



*Includes New York and Chicago banks.

[1] Includes seasonal borrowings since April 19, 1973.

Source: Federal Reserve Bulletin.

years especially, changes in the discount rate have lagged behind movements in money market rates. Consequently, in periods of rising rates, the cost of borrowing at the discount window becomes relatively more attractive compared to the cost of raising funds in other sectors of the money market.

Borrowings spurted sharply in the periods of credit tightness in 1969, 1973, and 1974. Considering the low level of the discount rate relative to the cost of alternative sources of reserve adjustment funds in those periods, however, the volume of borrowings would undoubtedly have been much greater without the use of discount administration as a rationing device.

LENDER OF LAST RESORT

A large part of the sharp rise in borrowing from the Federal Reserve in 1974 was by one bank, Franklin National Bank. Early in 1974 Franklin National reported poor operating earnings and substantial losses in foreign exchange operations. Its holding company announced on May 10, 1974 that it planned to suspend the regular dividend payment on both common and preferred stock. Massive withdrawals of deposits followed and on May 12 the Federal Reserve announced that, in its role of "lender of last resort," it would advance funds to Franklin National as needed. Subsequently, loans by the Fed to Franklin National reached as high as $1.75 billion in October 1975. In that month a merger was arranged with another bank, European-American, and an arrangement was worked out with the FDIC whereby it assumed the Federal Reserve loan and agreed to repay it over the next three years as collateral supplied by Franklin was liquidated.

In its role as "lender of last resort" the Federal Reserve has a responsibility to provide funds to banks when the consequences of failure to do so would aggravate or lead to a financial crisis. It was this role that the Chairman of the Federal Reserve Board, Arthur Burns, was taking when he announced that "The Federal Reserve, as lender of last resort, provided emergency assistance to Franklin beginning last May. By doing so, we kept Franklin's banking services available, prevented serious adverse consequences in financial markets both here and abroad, and provided the time necessary for the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Federal Reserve to work out a satisfactory permanent solution."

The loan to Franklin was made at the discount rate of 8 per cent, which was at the time well below money market rates. As a reaction to this development, the Federal Reserve in September 1974 established a new category of discount borrowing under which a special discount rate could be applied to member banks requiring exceptionally large assistance over a prolonged period of time. That special discount rate, established under Section 10(b) of the Federal Reserve Act, has typically been set at one to two percentage points above the Section 13 rate.

DISCOUNTING VS. BUYING FEDERAL FUNDS

Banks that manage their reserve positions closely usually meet short-run reserve deficiencies either by borrowing from the Federal Reserve or by buying Federal funds. Large banks tend to incur reserve

deficiencies more frequently than small banks and tend to rely more heavily on borrowed funds. The tendency to use both sources of funds increases rapidly with bank size. Most large banks borrow from both sources, but smaller banks tend to use one source or the other, but not both.

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Federal Funds

by Jimmie R. Monhollon

One of the most important money market developments in the post-war period has been the growth of trading in Federal funds. While the intricacies of the Federal funds market are familiar only to those who deal in it on a regular basis, a general knowledge of the market is necessary to a proper understanding of our financial system.

WHAT ARE FEDERAL FUNDS?

Originally, a Federal funds transaction denoted a transfer of immediately available funds (usually excess reserves) at a Federal Reserve Bank from one member bank to another. Indeed, the term is still sometimes used in this limited sense. In recent years, however, the term "Federal funds" has taken on a broader meaning. Today, the banking community considers Federal funds to be any funds that are immediately available and not subject to reserve requirements. These include "real" or one-day Federal funds, repurchase agreements, term Federal funds, and other forms of borrowing nonreservable immediately available funds. Instructions for the preparation of Reports of Condition by insured commercial banks include as Federal funds all transactions in one-day immediately available funds and repurchase agreements on securities regardless of maturity. Consequently, it is impossible to separate the transactions that exclusively involve interbank lending of deposits at the Federal Reserve Banks. Nevertheless, the primary focus throughout this article will be on interbank lending in the Federal funds market.

Little detailed quantitative information is available on the suppliers of Federal funds. In 1974, however, the Federal Reserve surveyed 45 large banks (accounting for about two-thirds of all Federal funds borrowing) to determine the sources of their gross Federal funds in the statement week of April 24, 1974. The results of the survey are shown in the table. The first two columns of the table divide all Federal funds borrowing into "regular" borrowings of immediately available funds and borrowings of immediately available funds through U.S. Government and agency repurchase agreements. Under current Federal Reserve regulations member banks can borrow outright immediately available funds not subject to reserve requirements and interest rate ceilings from other banks, some nonbank thrift institutions, Federal agencies,

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GROSS BORROWINGS OF IMMEDIATELY AVAILABLE FUNDS DAILY AVERAGE FOR WEEK ENDING APRIL 24, 1974

(Amounts in Billions of Dollars)
45 Large Banks

BORROWED FROM	Regular Federal Funds[1]	RP's on U.S. Gov't and Agency Securities	Total	Amount Maturing in One Day[2]
I. LENDERS FROM WHOM MEMBER BANKS MAY BORROW "REGULAR" FEDERAL FUNDS	(1)	(2)	(3)	(4)
1. Member commerical banks	13.1	1.0	14.1	12.8
2. Nonmember commerical banks	3.9	0.5	4.4	4.2
3. Domestic offices of foreign banks	3.2	*	3.2	2.4
4. Edge Act and Agreement Corp.	0.1	*	0.1	0.1
Commerical Bank Subtotal	20.3	1.5	21.8	19.5
5. Savings and loan associations and cooperative banks	2.9	*	2.9	2.3
6. Savings banks	1.6	*	1.6	1.6
7. Federal Home Loan Banks and Board	1.2	*	1.2	0.7
8. All other agencies of the U.S.	0.5	0.2	0.7	0.4
9. Securities Dealers	*	0.9	1.0	0.2
TOTAL	26.5	2.6	29.2	24.7
II. LENDERS FROM WHOM MEMBER BANKS MAY NOT BORROW "REGULAR" FEDERAL FUNDS				
1. Business corporations	—	2.1	2.1	1.2
2. State and local governments	—	3.0	3.0	1.4
3. Foreign banks and foreign official institutions	—	0.6	0.6	0.5
4. All other	—	0.2	0.2	0.1
TOTAL	—	5.9	5.9	3.2
GRAND TOTAL	26.5	8.7	35.3	27.9
MEMO: Noncommercial Bank Subtotal	6.2	7.2	13.5	8.4

[1] May be secured or unsecured.
[2] Includes continuing contracts which have no maturity but can be terminated without advance notice by the lender or the borrower.
* Less than $500 million.
Note: Totals may not add due to rounding.
Source: Board of Governors of the Federal Reserve System.

and securities dealers who have received Federal funds in payment for securities sold. (Funds provided by securities dealers are nonreservable if in maturities of one day.) These regular Federal funds transactions may be secured or unsecured, although the most common regular transaction involves a purchase and sale of Federal funds on an unsecured overnight basis. While virtually all borrowings of funds on deposit at the Federal Reserve Banks are included as regular Federal funds transactions, some regular Federal funds transactions do not involve Federal Reserve deposits. For instance, a regular Federal funds transaction occurs when a nonmember bank loans immediately available funds to its correspondent member bank through the transfer of deposits already on its correspondent's books.

In the second category of Federal funds transaction, banks can borrow immediately available funds not subject to reserve requirements and interest rate ceilings from any type of lender if the loan is arranged through a repurchase agreement involving a U.S. Government or U.S. agency security. Federal funds are borrowed under repurchase agreements both from lenders, such as business corporations and state and local governments, from whom member banks cannot borrow regular Federal funds, and, to a lesser extent, from lenders from whom member banks can borrow regular Federal funds. Under the terms of the repurchase contract, the borrowing bank obtains Federal funds by selling securities to the lender. The borrower then repays the "loan" by repurchasing the securities a day or more later generally at the same price plus interest at a rate specified in the contract. Repurchase agreements are infrequently used in interbank Federal funds transactions. As a rule, banks dislike the extra bookkeeping, trouble, and expense that is involved.

The table indicates that a not insignificant amount of Federal funds have a maturity of greater than one day. This type of funds transaction, which has become more common in recent years, arises most frequently through repurchase agreements, although thrift institutions and agencies of foreign banks in the U.S. engage in term Federal funds trading as well. Term Federal funds are essentially interbank loans having a maturity of greater than a day. Some Federal funds transactions, important to smaller banks, are "continuing contracts," which have no specific maturity but can be terminated without advance notice by the borrower or lender. While interest bearing, continuing contracts do not carry a fixed rate of interest determined at the beginning of the loan.

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INTERBANK FEDERAL FUNDS LENDING

Interbank Federal funds transactions generally involve the purchase (borrowing) or sale (lending) of member bank deposits at Federal Reserve Banks for one business day at a specified rate of interest. Nonmember banks also can gain access to the interbank funds market through their member bank correspondents. A supply of Federal funds arises because some banks have reserves on a given day in excess of reserve requirements. Demand arises because other banks run reserve deficits on the same day. Since excess reserves yield no income, bankers try to convert them into earning assets if they are large enough to be significant. This may be done in a variety of ways, but if the excess is expected to be only temporary, a practical approach is to sell Federal funds. If the bank then encounters a reserve deficiency, it may need to take no further action since the reserves it has sold will be returned automatically the next day; or if the reserve loss has been very large, it may enter the market as a Federal funds buyer. Thus, the Federal funds market affords bankers a greater degree of flexibility in adjusting reserve positions so as to come out with a minimum of average daily excess reserves over the course of the reserve averaging period.

Many banks use the funds market not only as a means of minimizing excess reserves over the reserve averaging period but also as a semipermanent source of funds. This latter use of the funds market developed with the growth of bank liabilities management in the 1960's and has been an important factor underlying the rapid expansion of the market. Some large banks now regularly borrow in the funds market an amount close to their total required reserves. Other banks elect to lend Federal funds on a relatively continuous basis.

Historically, most of the trading in interbank Federal funds has been conducted by relatively large member banks. This is natural since participation in the market requires a very close and almost constant scrutiny of the bank's money position, and only the larger banks have found it economical to employ full-time money position managers. Another factor has been the market practice of trading funds only in very large blocks, typically in units of $1.0 million. In recent years, however, trading in smaller units has become increasingly common as smaller banks have become more active in the market. Their greater participation has been due, in part, to the increasing cost of holding idle funds as interest rates have risen. Also important has been the growing readiness of large banks to trade funds in smaller blocks as an accommodation to their correspondents.

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DEVELOPMENT OF THE INTERBANK MARKET

The practice of trading in balances at the Federal Reserve originated in New York City in the early 1920's. Soon local markets developed in other Federal Reserve cities and financial centers. Trading between Federal Reserve Districts, however, remained quite small during the market's early years. Federal funds trading of all types died out almost completely in the 1930's when banks were laden with excess reserves and remained low in the 1940's when the Federal Reserve System helped finance the war by standing ready to buy Government securities at fixed prices. Banks preferred to make reserve adjustments in the latter period by purchasing and selling Government securities, since Federal Reserve practices eliminated the risk of market loss.

It was not until the resumption of flexible monetary policy in the early 1950's, after the Treasury-Federal Reserve accord, that the market in Federal funds began to revive. With the unpegging of bond prices and increased borrowing from the Federal Reserve, banks began to seek alternative means of adjusting reserve positions. The secular rise in interest rates also encouraged them to manage their reserve positions more carefully.

LOCATION OF THE INTERBANK MARKET

In a sense, the interbank Federal funds market is nationwide inasmuch as excess reserves may arise anywhere in the country. Since funds in even multiples of $1,000 may be transferred instantaneously and without cost over the Federal Reserve's wire transfer facilities, any member bank (or nonmember bank, through its correspondent) is potentially a part of the nationwide network.

Although funds may originate anywhere and be dispatched anywhere, the focal point of the market is New York City. Because of its prominence as a commercial, industrial, and financial center, a system of communications has developed which makes it convenient to channel transactions through New York. In the first place, the money market banks in New York are generally net buyers of interbank Federal funds, and out-of-town banks have come to look on New York as a place where funds can readily be sold. Second, these New York banks serve as correspondents for banks all over the country and are therefore in a position to know where Federal funds can be found and where they are needed. Third, some of these banks stand ready to accommodate their out-of-town correspondents by absorbing or supplying funds regardless of their own reserve positions. Fourth, several New York firms, including the Funds desk of one large bank, serve exclusively as brokers, receiving

reports on sources of and demands for funds, and bringing buyers and sellers together. The accommodating banks differ from the brokers in that they are usually principals in their Federal funds transactions, frequently trading both sides of the market. In recent years there has been a significant growth in the number of bank accommodators outside New York City; nevertheless, New York remains the focal point of the market.

MARKET MECHANICS

The mechanics of market transactions vary, of course, with the type of transaction and the location of the buyers and sellers. Since unsecured regular transactions constitute the bulk of interbank trading, the mechanics of this type of operation are of primary interest.

Trading between banks in New York City is customarily accomplished by a simultaneous exchange of checks. The selling bank gives the buying bank a check drawn on its balance at the Federal Reserve and receives in exchange a check which the buying bank writes on itself. The draft on the Federal Reserve Bank is paid immediately, but the check which the buying bank writes on itself is collected through the clearing house and is not paid until the following day. Thus, the buying bank has use of the selling bank's excess reserves for one day and in return for this use pays the agreed rate on Federal funds. The interest on the loan is normally included in the clearing house check which the buyer gives the seller.

Exchange of checks is confined largely to New York City. Procedures differ somewhat in other areas, but, in general, trading within a single Federal Reserve District may be described as follows: After arranging the terms of the transaction by phone, the seller notifies the Federal Reserve Bank to transfer the agreed-upon amount from his account to that of the buyer. The notification may be made by letter, by wire, or by telephone followed by written confirmation. The following day the procedure is reversed. The interest on the loan may be paid with the principal in the return transfer, or it may be remitted separately either by debiting or crediting a correspondent balance, or if no correspondent relationship exists, by cashier's check.

When the transaction is between banks in different Federal Reserve Districts, the actual transfer is made over the leased-wire facilities which connect all Federal Reserve Banks and branches. After arranging the details of the transaction by telegraph or telephone, the selling bank orders the Federal Reserve Bank in its District to debit its reserve account and to wire instructions to the buyer's Federal Reserve Bank to credit a

like amount to its account. Repayment is made the following day by reversing the procedure. The interest on the loan may be included in the return wire or may be paid by separate check or by debiting or crediting a correspondent balance.

These procedures also apply to secured transactions, with only one additional step. The borrowing (buying) bank offers collateral by pledging securities which will be held in custody for the account of the selling bank until the transaction is reversed.

IMPORTANCE OF THE FEDERAL FUNDS MARKET

The Federal funds market is important to banks because of its prominent role in the process of reserve adjustment and its role, for some, as a semi-permanent source of funds. As already mentioned, many member banks try to hit their required reserve targets as accurately as possible because deficiencies in excess of 2 per cent of required reserves may be charged at the discount rate plus 2 per cent and the existence of excess reserves means loss of income. (Deficiencies or excesses equal to or less than 2 per cent of required reserves may be carried forward into the next reserve computation period.)

The Federal funds market, of course, is not the only means of reserve adjustment. A bank needing additional reserves may sell Treasury bills or other marketable paper, borrow at the Federal Reserve discount window (if a member bank), call a loan with a Government securities dealer, or raise dealer loan rates to encourage the dealers to refinance elsewhere. To a large extent a bank's choice depends on relative costs and also on the length of time the additional reserves will be needed. If funds are needed for only a very brief time, the bank may buy Federal funds or borrow from the Federal Reserve to avoid the cost involved in selling short-term assets one day and buying them back the next.

The Federal funds market is also important to the monetary authorities because it speeds up the transmission of the effects of actions taken by the Federal Reserve System's Trading Desk in New York. This is true because the shifting of reserves from banks with excesses to those with deficits permits banks in the aggregate to stay more fully invested. In other words, a given volume of banking business can be conducted with a smaller volume of excess reserves. This minimizing of excess reserves results in less slippage between a change in the supply of nonborrowed reserves and the resulting response by the financial community.

The market also supplies useful information to policymakers, since it is highly sensitive to changes in the demand for and supply of funds. The

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Federal Reserve personnel who manage the System's open market account at the New York Trading Desk watch the Federal funds rate closely because it is generally a good indicator of the adequacy of reserves in the banking system. If reserve supplies are inadequate relative to required reserves, which are determined on the basis of deposit levels two weeks earlier, the funds rate will tend to rise. Of course the Federal Reserve personnel make estimates of factors affecting the supply of reserves, but these estimates are subject to error and movement of the funds rate can serve as an additional indicator of reserve availability.

In recent years the Federal funds market has taken on another important role in the financial markets. Under current operating procedures the Federal Reserve explicitly states both long-run (annual) and short-run (two-month) desired growth rates for various definitions of the money supply, commonly referred to as the monetary "aggregates." The Federal Reserve seeks to attain these monetary goals through manipulation of the Federal funds rate. For example, if it views the growth rates of the aggregates as too slow, it may reduce the funds rate by adding to the supply of nonborrowed bank reserves. For this reason the Federal funds rate has been closely watched in recent years as an indicator of monetary policy.

INTRAWEEKLY FEDERAL FUNDS RATE PATTERN

The Federal funds rate is influenced by special considerations that cause it to fluctuate more widely in the short run than other money market rates. One of the special factors is the Federal Reserve's system of reserve requirements. Reserve requirements must be met on a daily average basis over the statement week which runs from Thursday through Wednesday. Since excess reserves equal to only 2 per cent of required reserves can be carried over from one reserve averaging period to the next, banks tend to dispose of their excess reserves for whatever price they can get as the reserve statement week draws to a close. On the other hand, deficiencies of no greater than 2 per cent of required reserves can be carried forward without penalty into the following reserve averaging period. Therefore, banks with reserve deficiencies at the end of the settlement period generally enter the funds market for reserves (or borrow at the discount window). Consequently, the Federal funds rate frequently falls or rises sharply on Wednesday, depending on the overall adequacy of reserves in the banking system, as banks close out their reserve settlement period. The predominant pattern used to be for the funds rate to fall at the end of the settlement period. In 1975 and 1976,

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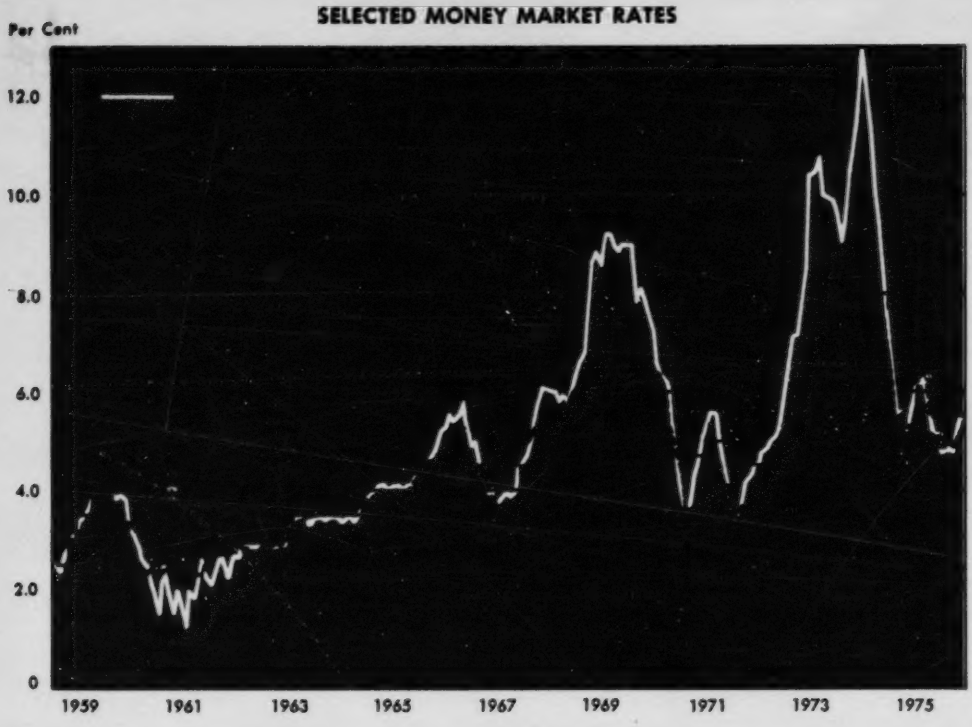
however, while the funds rate continued to exhibit substantial movement at the end of the settlement week, it was about equally likely to move below or above the weekly average rate.

RELATIONSHIP BETWEEN FUNDS RATE AND DISCOUNT RATE

The relationship between the Federal funds rate and the discount rate has differed over time. As the chart on page 47 shows, the Federal funds rate stayed very close to the discount rate when interest rates rose in 1959. Bankers used the Federal funds market primarily as a means of reserve adjustment and switched back and forth between the discount window and the Federal funds market. Strong demand for reserves pushed the Federal funds rate up to the discount rate, which acted as a ceiling on the funds rate because bankers refused to pay more than the discount rate for Federal funds. As money market conditions began to ease in 1960, the three-month Treasury bill rate fell sharply below the discount rate. But the Federal funds rate continued to be more closely associated with the discount rate than the bill rate, since bankers had few bills to liquidate and continued to buy Federal funds heavily in order to reduce their borrowing from the System. Once bank liquidity was restored, banks could use the bill market to a greater extent as a means of reserve adjustment. With the bill rate well below the discount rate during 1961 and early 1962, the Federal funds rate fluctuated more closely around the bill rate.

Since the early 1960's the relationship between the Federal funds rate and the discount rate has been much more variable than in earlier years. In particular, the Federal funds rate has remained well above the discount rate for prolonged periods of time. The new relationship primarily reflects the expanded role of the Federal funds market as a permanent source of funds for many banks. As a result of this expanded role, the Federal funds market grew dramatically. In 1960 daily average gross interbank Federal funds purchases of 46 major money market banks were $1.1 billion. By 1970 daily average purchases of this group of banks had soared to $8.3 billion, and by 1975 daily average purchases had risen further to $20.0 billion. When the funds market was relatively small, the discount window was a more effective substitute for Federal funds. Increases in the differential between the funds rate and the discount rate were tempered as banks increased their use of the discount window. As the funds market grew, however, discount window administration prevented the relatively low discount rate from acting as a ceiling or constraint on the movement in the funds rate. That is not to say that



Source: Federal Reserve Bulletin.

the level of discount borrowing has not continued to respond to increases in the alternative cost of money in the Federal funds market. However, the permissible levels of discount window borrowing are not sufficient to prevent the funds rate from rising well above the discount rate. Of course, the increased variability of the differential between the two rates could have been prevented if the Federal Reserve had been willing to change the discount rate frequently to keep it in line with the funds rate and other money market rates. The Federal Reserve has not chosen to do this, however, for two reasons. First, it has at times been reluctant to raise the discount rate because it feared that the "announcement effects" of such a decision would put additional upward pressure on market rates. Secondly, it has argued that its policy goals were being accomplished by policy instruments other than the discount rate and that frequent moves in the discount rate were unnecessary.

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BASIC RESERVE POSITION

As indicated earlier, two major alternatives for banks with reserve deficiencies are to borrow in the funds market or at the discount window. A useful measure of the amount of borrowing in the funds market or at the discount window is called the "Basic Reserve Position." Developed to be an indicator of the pressure on one or more of the money market banks, the basic reserve position is defined as excess reserves minus borrowings from the Federal Reserve System minus net Federal funds purchases. Weekly data on the basic reserve positions of 46 large money market banks are published in the **Federal Reserve Bulletin.**

Dealer Loans and Repurchase Agreements

by Jimmie R. Monhollon

Loans made at very short term to large Government securities dealers constitute an integral part of today's money market mechanism. Such loans are of two general types. One type closely resembles brokers' call loans, which for many years were the chief money market instrument of interest to banks. In this kind of loan, the dealer retains title to the securities but transfers them to the lender or his agent as collateral for the duration of the loan. Most such loans are payable on demand. A second type is extended under a contract involving the actual sale of securities to the lender by the borrowing dealer, with a commitment on the part of the latter to repurchase the securities at the same price plus a stipulated interest charge. Such contracts, termed repurchase agreements, or simply RP's, may either be written for a specified period or may have no stated maturity date, in which case the contract can be terminated by either party without advance notice.

Banks and other money market lenders frequently use dealer loans and repurchase agreements as a convenient means of making short-run adjustments in their liquid assets positions. Thus, these loans compete with other money market instruments that are widely used for the same purposes, i.e., Treasury bills, Federal funds, negotiable certificates of deposit, bankers' acceptances, prime commercial paper, and discounts and advances at the Federal Reserve. Like these other instruments, dealer loans and repurchase agreements possess unique characteristics which assure them a special niche in the money market.

ROLE OF GOVERNMENT SECURITIES DEALERS

The tremendous growth of the Federal debt over the past few decades has been accompanied by the development of a highly organized U.S. Government securities market in which a huge volume of business is transacted daily. The smooth and orderly operation of this market requires a vast network of machinery and communications which focuses on a core of 34 primary Government securities dealers located principally in New York City. Dealers include a few large banks with their own dealer departments as well as nonbank dealers. A number of brokers, commercial banks, and other intermediaries handle transactions for customers, but most of these institutions turn ultimately to the special-

ized dealers to execute their orders. Dealer banks, of course, transact such business through their own dealer departments.

The market for U. S. Government securities is not an organized exchange but rather an over-the-counter market in which dealers buy and sell from their own inventories or positions at their own risk. This feature greatly increases the liquidity of Government securities, since the brokerage function of matching buyers and sellers in multimillion-dollar transactions would prove difficult, if not impossible, at least in some maturities.

A broad and active market in Government securities is extremely important to the U. S. Treasury, which faces heavy competition from many other borrowers in today's money and capital markets. Dealers play an important role in the Treasury's multi-faceted financing operations. During Treasury cash and exchange financings, dealers usually take substantial amounts of the new issues into position, hoping to place them with investors as demand develops. Without dealer participation these periodic deluges of new issues would be quite difficult for the market to absorb and would tend to depress prices temporarily to unrealistic levels.

Government securities dealers also occupy a strategic position in the machinery through which the monetary authorities influence the availability and cost of money and credit. Through them the Federal Reserve conducts its open market operations to influence member bank reserves. The effects of Federal Reserve operations thus impinge first on Government securities dealers and spread from them to all financial markets.

DEALER FINANCING

Dealer positions or inventories in U.S. Government securities are shown in the chart on page 51. Dealers finance virtually all of their sizable positions with borrowed funds. Consequently, total positions and total financing fluctuate closely together. Data on dealer financing include bank and nonbank dealer borrowing and dealer bank use of "own bank funds," or funds allocated by the bank to its own dealer department. (The available data on dealer financing of positions in U.S. Government securities include the financing of positions in Federal Agency positions, which is generally about 15 per cent of the total. Hence the financing data is not strictly comparable to the position data shown in the chart.) Dealer financing requirements averaged somewhat more than $4.4 billion per day from 1968 through the first half of 1976. Daily

DEALER POSITIONS AND FINANCING

Source: Federal Reserve Bulletin.

average needs in 1975 were $6.7 billion, varying from a low of $5.7 billion in April to a high of $7.7 billion in June.

Since borrowing is such an important part of dealers' activities, one of their prime concerns each day is to secure loans to meet their requirements at the lowest possible cost. Competition forces them to search the country for new sources of funds at low interest rates and to fashion attractive loan arrangements adapted to the needs of each different type lender. Suppliers of dealer loans and repurchase agreements include nonfinancial corporations, commercial banks, and miscellaneous lenders such as state and local governments, foreign institutions, insurance companies, and—when necessary to implement monetary policy—the

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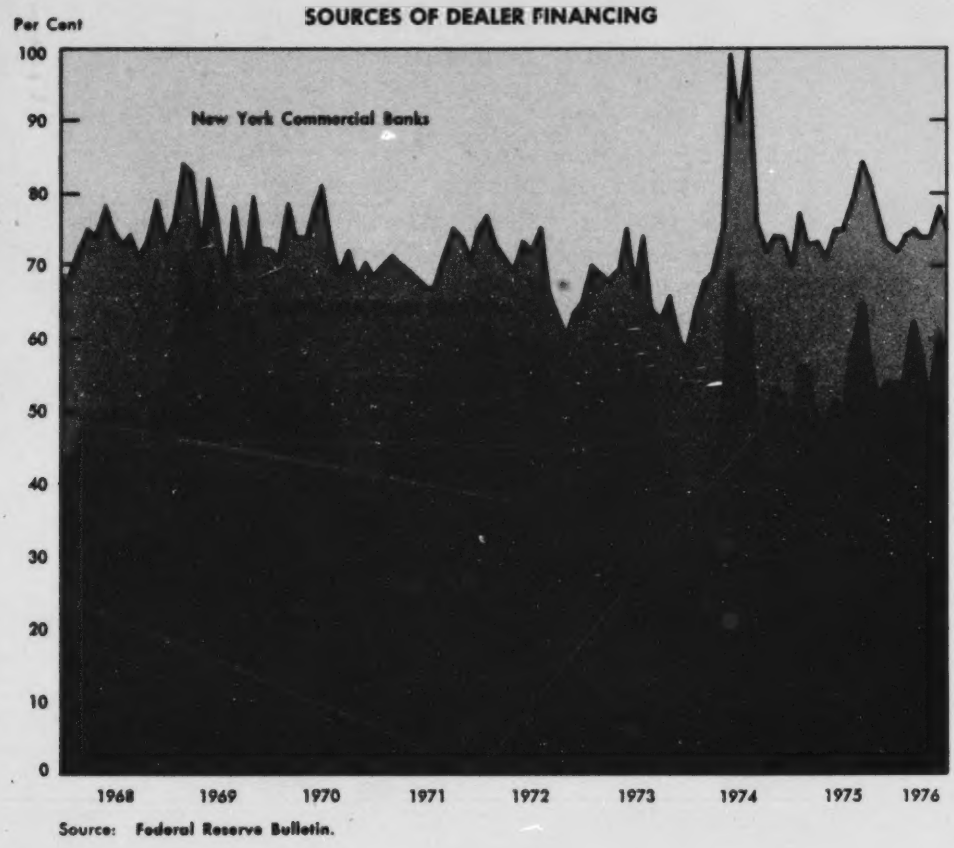
Federal Reserve Bank of New York. For the time period shown in the graph on page 53, corporations supplied on the average about 15 per cent of dealer financing. Banks in New York City supplied about 28 per cent, banks elsewhere about 21 per cent, and other lenders about 36 per cent. Because rates charged by out-of-town lenders are generally lower than those charged by New York City banks, dealers usually try to tap out-of-town sources early in the morning and turn to the New York banks for their residual needs later in the day.

Many lenders, especially corporations, prefer repurchase agreements to the more conventional type loan. From the corporate standpoint, repurchase agreements afford good rates of return as well as convenient maturities, which range from one day to several months and are easily tailored to coincide with corporate needs for cash. Another attractive feature is the absence of market risk; the borrowing dealers carry the risk by contracting to repurchase the securities at a specified price.

Commercial banks outside New York City are another important source of funds. In contrast to New York banks, most of these banks will not lend to dealers when their reserve positions are so low that they may subsequently be forced to borrow in the Federal funds market. However, in regional centers for Federal funds, such as Cleveland, Indianapolis, Boston, Philadelphia, and San Francisco, there are banks which will make RP's and deliberately take a short reserve position which they will plan to cover with funds from correspondents. Banks make both collateral loans and repurchase agreements with dealers, and often prefer these alternatives to selling Federal funds because the rate of return is frequently higher. Repurchase agreements, however, may involve considerable trouble and expense because title to the securities must be transferred, and many banks regard RP's as unprofitable unless they run for three days or more. If excess reserves are expected for several days running, a repurchase agreement will avoid the expense of arranging a new Federal funds sale each day.

NEW YORK BANK LENDERS

If dealers cannot find financing elsewhere, they turn to the banks in New York. Rates charged by New York banks are generally higher than those charged by out-of-town lenders, even after the cost of clearing out-of-town loans through New York banks is taken into account. Nevertheless, most dealers do part of their daily borrowing at these banks. Their proximity is convenient for late-in-the-day transactions and for



Source: Federal Reserve Bulletin.

cash transactions which require payment and delivery on the same day the transaction is negotiated.

New York banks regard collateral loans to dealers as a very important means of adjusting reserve balances to desired levels. Their preference will generally hinge on relative costs, the availability of alternative instruments, and the length of time reserve surpluses (or deficiencies) are expected to last. As can be seen from the chart on page 55, the rate of return on dealer loans is generally higher than on other reserve adjustment media.

Each morning the major money market banks in New York post dealer lending rates for both new loans and renewals. Depending on their reserve positions and conditions in the money market, they encourage

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or discourage dealer loans by varying the rates they charge. Consequently, on a given day the posted rate may vary somewhat from bank to bank. There are several major banks that stand ready to make loans to dealers at their posted rates even if such transactions force them to purchase Federal funds to replace their reserve losses. Thus, at some price dealers are always able to finance their positions.

If the Federal Reserve needs to supply reserves to the banking system, the Federal Reserve Bank of New York may agree to enter into repurchase agreements with Government security dealers. These agreements, which are made at a competitively determined rate and only at the initiative of the Federal Reserve, are an important complement to regular purchases and sales of Government securities in the open market. They are particularly useful when reserves are currently needed but reserve projections indicate that the need will not last for more than a few days. In such a case the Federal Reserve may make repurchase agreements scheduled to mature when reserves will probably be more readily available. This procedure makes it unnecessary to buy outright a large block of securities one day and sell them the next or in the very near future. Repurchase agreements were also used in the early 1960's in the Federal Reserve's effort to keep short-term rates up for balance of payments reasons. Their use avoids the direct downward pressure exerted on bill rates when the System buys short-term Government securities outright. When RP's are used, dealers know that the reserve injection is not permanent but will be reversed shortly.

In July 1966 the System initiated the practice of using "reverse" repurchase agreements to withdraw reserves on a temporary basis. A reverse RP, more accurately described as a matched sale-purchase transaction, is nothing more than a sale of a block of securities to a Government securities dealer, either bank or nonbank, with the understanding that the Federal Reserve will repurchase the securities at an agreed upon time in the future. A massive airlines strike, which caused a sharp rise in float and hence reserves, was the occasion for the first use of the reverse RP. Since then, this technique has continued to be used from time to time to absorb reserves temporarily injected by various market factors affecting reserves. Analogous to the case of the RP, the matched sale-purchase agreement is thought to exert less upward pressure on interest rates than an outright sale, primarily because the technique provides dealers and other market participants with knowledge that the reserve absorption is temporary.

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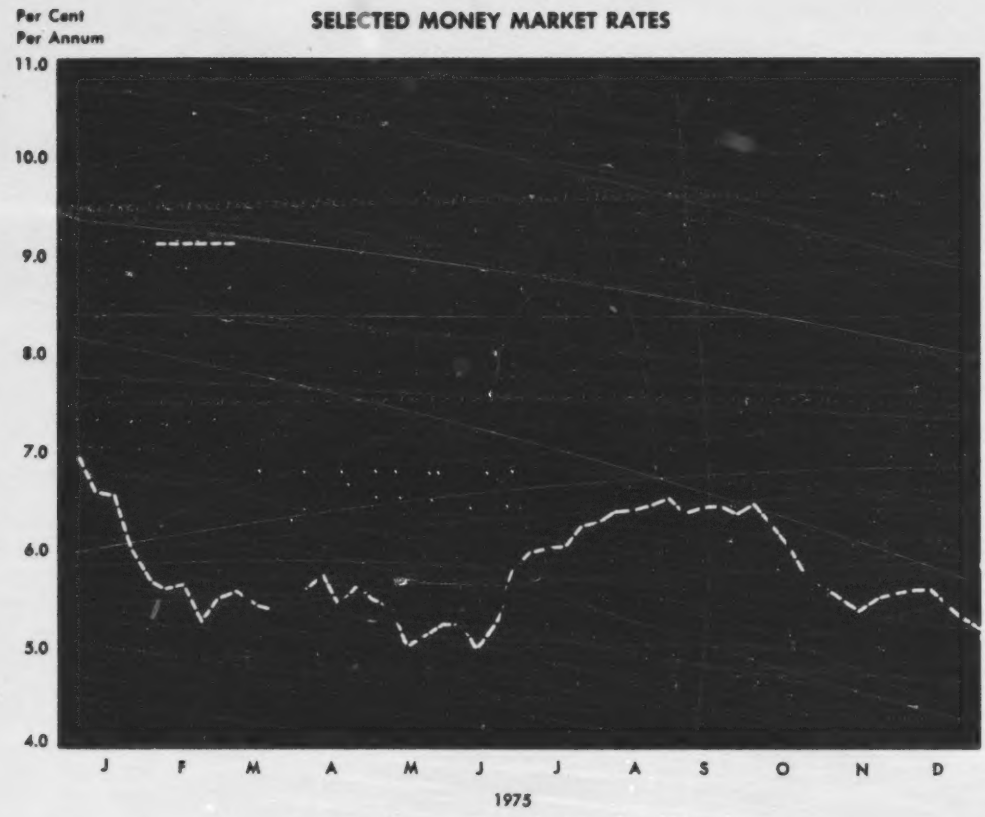

Sources: Federal Reserve Bulletin and Federal Reserve Bank of New York.

The decline in recent years in the proportion of the Treasury's balance held in tax and loan accounts has greatly increased the Federal Reserve's use of repurchase and reverse repurchase agreements to offset the impact on reserves of abrupt movements in the Treasury's deposits at the Federal Reserve Banks. For instance, in periods immediately following individual or corporate income tax dates there is generally a very large shift of deposits from the public to the Treasury. Whereas in earlier years these deposits would remain in tax and loan accounts in the commercial banking system, under current procedures they are rapidly shifted to the Treasury's account at the Federal Reserve Banks. As a result, reserves are drained from the banking system; subsequently,

when the Treasury spends the funds and its deposits at the Federal Reserve Banks are run down, reserves are supplied to the banking system. In the two weeks following the June 15, 1976 tax payment date, for example, Treasury deposits at the Federal Reserve Banks soared $7.7 billion. A large part of the resulting reserve loss, $3.5 billion, was offset (on a daily average basis) by an increase in U.S. securities held by the Federal Reserve under repurchase agreements.

CONCLUSION

Dealer loans and repurchase agreements are important money market instruments. Nonbank participants in the money market frequently adjust their liquidity positions by making RP's with dealers or by allowing maturing RP's to run off; and banks, under certain circumstances, like to adjust reserve positions by use of dealer loans instead of through such alternatives as Federal funds, Government securities, bankers' acceptances, or certificates of deposit.

Since dealer loans and repurchase agreements are fairly close substitutes for other money market instruments, it is logical to expect a fairly close relationship between their rates and other money market rates. Because dealer positions are financed primarily with borrowed money, a rise in dealer loan rates, for example, may induce dealers to lighten inventories by marking down prices, which raises the effective return to investors. Although the relationship between various short-term rates is not fixed or rigid, a rise in one tends to be transmitted fairly soon to several of the others.

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Negotiable Certificates of Deposit*

by Jane F. Nelson

In February 1961 the First National City Bank of New York announced that it would issue negotiable certificates of deposit in large denominations and that a major Government securities dealer had agreed to make a market in them. Other money market banks and dealers quickly followed suit, thus preparing the way for the spectacular growth of this new money market instrument.

A negotiable certificate of deposit, or CD, is a marketable receipt for funds deposited in a bank for a specified period at a specified rate of interest. The owner of the CD at the time of its maturity receives both principal and interest, while its readily salable feature enables the original purchaser to retrieve his funds before maturity by selling the instrument to another holder. Time certificates did not originate in 1961, but prior to that time they represented primarily savings-type deposits and were generally not negotiable due either to explicit or tacit agreement or to the absence of a secondary market. Before 1961 about $2.7 billion of these instruments issued to individuals, partnerships, and corporations were outstanding at all member banks, with only about $29 million representing obligations of New York banks. In contrast, today's CD market is dominated by the nation's largest banks, particularly those in New York, and by their corporate customers.

* This article is primarily a discussion of marketable certificates of deposit in denominations of $100,000 and over issued by weekly reporting banks.

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BACKGROUND

Although traditionally loath to accept corporate time deposits, New York banks were forced by converging postwar economic and financial developments to reconsider their policy. The competitive position of these banks deteriorated during this period, partly because of the slower rate of population growth in the Northeast than elsewhere and partly because of the trend toward industrial decentralization. Of still greater significance was the loss of demand deposits, which resulted from the increasing sophistication of corporate treasurers in managing their cash balances. As short-term interest rates rose, the accumulation of temporarily excess cash in demand accounts became more and more costly. Consequently, corporations began economizing cash balances and seeking liquidity through investments in such money market instruments as Treasury bills, commercial and finance paper, and repurchase agreements with dealers. This caused New York banks, which are the principal depositories of large corporations, to experience a further reduction in their share of total member bank deposits, which fell from 31 per cent to under 17 per cent between 1940 and 1960.

The negotiable CD was designed specifically to attract corporate deposits and to enable banks to compete more effectively for short-term funds. This explains its immediate popularity with the New York and other money market banks. The volume of all negotiable CD's outstanding at weekly reporting banks rose steadily from less than $1.0 billion at the end of 1960 to $18.6 billion in August 1966, second only to Treasury bills among money market instruments. During the last four months of 1966, however, the volume outstanding shrank by about $3.0 billion as market rates of interest surpassed the ceiling rates permitted on CD's by Regulation Q of the Board of Governors of the Federal Reserve System. With the start of 1967, interest rate relationships again favored the issuance of CD's. The volume of CD's outstanding rebounded sharply, reaching a peak of $24.3 billion in December 1968. Shortly after this, a spectacular runoff of CD's began as monetary policy tightened and market rates again shot past the Regulation Q ceilings. At the close of 1969, only $10.9 billion of CD's were outstanding. In June 1970, Regulation Q ceilings were lifted on CD's maturing in less than 90 days, and in May of 1973, the ceilings were lifted on longer maturities.

From mid-1970 through early 1975 CD volume expanded rapidly. In December 1974 CD's outstanding reached a peak of $92.8 billion, which was equal to 21 per cent of total commercial bank time deposits. Faltering loan demand and declining short-term yields accompanying the

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recession beginning in late 1974 resulted in a substantial decline in CD's in 1975. This decline continued into 1976 and by June of that year CD's had fallen $22.2 billion to $70.6 billion, which represented a decline of 24 per cent from their late 1974 peak level. Nevertheless, total CD's outstanding in June 1976 were still almost as great as the combined total of bankers' acceptances, dealer loans and repurchase agreements, and commercial paper.

CD CHARACTERISTICS

CD's may be in registered or bearer form, although the latter is more convenient for secondary market trading. Denominations range from $25,000 to $10 million, depending on the size of the issuing bank and the type of CD customer it is trying to attract. When banks first began issuing negotiable CD's, they tended to set a high minimum in hopes of attracting only those funds already destined for the money market. They were afraid that smaller denominations would encourage the conversion of normal corporate demand balances to CD's, with no resulting benefit to the issuing bank. In recent years, even the large money market banks, which initially issued mainly $1.0 million CD's, have begun to issue smaller denominations. The CD maturity date is chosen by the purchaser to fit his cash needs and may range from 1 to about 18 months. A survey taken in June 1976 showed that 73.5 per cent of total CD's outstanding at weekly reporting member banks matured within four months.

Interest is paid on the certificate's par value and accrues on a 360-day basis. The actual rate is, of course, determined by current money market conditions and is competitive with yields on other short-term instruments. In general, a CD must yield several basis points more than Treasury bills of comparable maturity to attract investors. Certificates bearing popular maturity dates, such as tax and dividend dates, do not require as large a premium in order to be competitive. The size of the issuing bank and the denomination of the certificate also influence the rate. CD's smaller than $1.0 million, for instance, will usually carry a higher rate than larger CD's of comparable maturity. Also, the largest "prime-name" banks, most of which are located in New York City, generally have been able to issue CD's bearing lower yields than the CD's of the smaller regional banks. The latter generally have had to pay a premium of 5 to 25 basis points. This advantage of the New York banks, however, was at least temporarily lost in the second half of 1975 when, in the wake of widespread concern over the possible default of New York City, in-

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vestors became concerned about the large amount of New York debt held by New York banks.

REGULATION Q

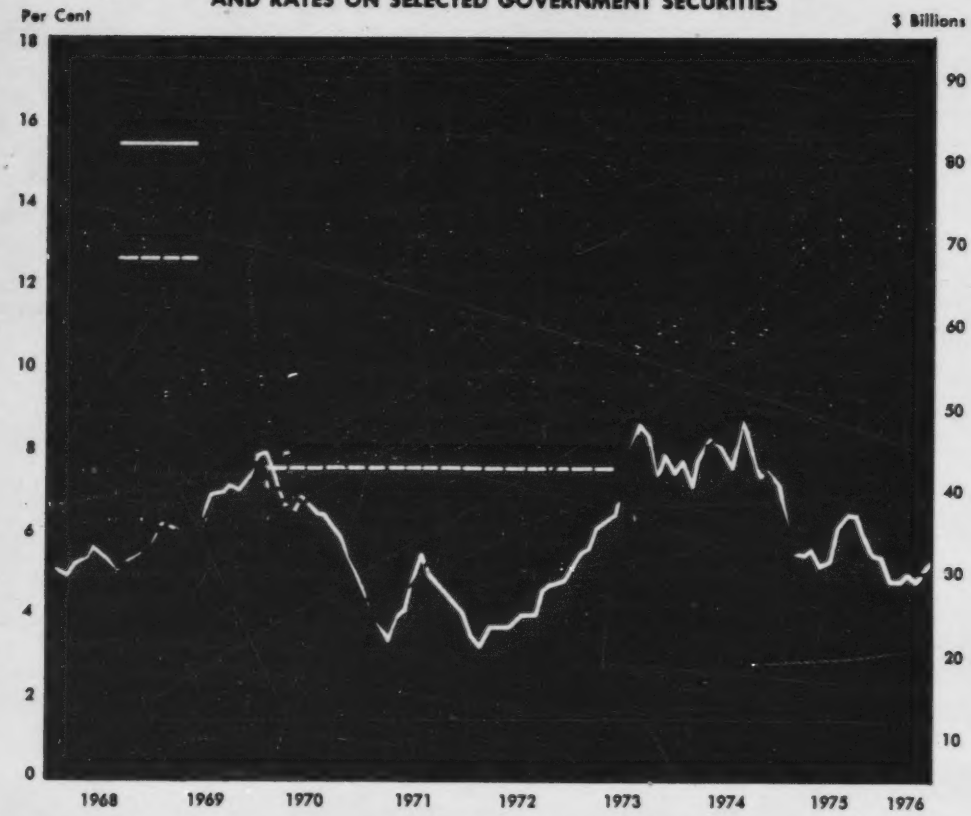
The Federal Reserve's Regulation Q, which sets the maximum rates payable on time and savings deposits, was until 1973 a fundamental consideration in the market for CD's. When short-term open market rates rose above or even approached the prescribed ceiling, CD's ceased to be competitive. Bankers found it increasingly difficult to replace maturing certificates and experienced large deposit losses as investors turned to higher yielding instruments. As a rule, since "lesser-prime" banks in the regional financial centers had to pay a premium over prime CD rates to attract funds, they were the first to be constrained by Regulation Q during periods of rising market rates. Loss of funds compelled banks to make compensating reserve and portfolio adjustments which were especially costly in the face of rising interest rates.

Situations of this nature occurred in 1966 and 1969. In 1966, the Board of Governors' decision not to revise Regulation Q ceilings as the general pattern of interest rates rose represented a departure from the previous practice of raising Q ceilings as they became restrictive. The decision to keep the ceilings unchanged reflected a System desire to curtail the expansion of bank loans by restricting the ability of aggressive banks to secure the necessary reserves by attracting new deposits. Between mid-August and November, major U.S. banks lost over $3.0 billion of deposits evidenced by CD's. To compensate for this, banks stepped up the liquidation of investments, thus aggravating the steep climb in money and capital market rates. A change in climate occurred in September, and by the end of the year rates had eased considerably, enabling CD's again to compete effectively with other instruments.

In 1969, CD rates again were allowed to become noncompetitive as market rates of interest rose. This time the duration of tight monetary policy was more prolonged and the effects on CD volume were of much greater magnitude than in 1966. Early in 1969 the 6.25 per cent maximum rate on CD's became unattractive to investors. Attrition began immediately and continued throughout the year as short-term rates rose to 9 per cent and higher. In early 1970, following an increase in Regulation Q ceilings and a significant easing in short-term rates, banks were again able to attract large CD deposits.

Shortly thereafter, in June 1970, Regulation Q ceilings were lifted on CD's maturing in less than 90 days. This action was taken to permit

CD's OUTSTANDING, MAXIMUM RATES PAYABLE ON CD's,* AND RATES ON SELECTED GOVERNMENT SECURITIES



*Maximum rates were suspended on all time deposits over $100,000 on May 16, 1973.

Source: Federal Reserve Bulletin.

banks to meet the unusually strong demand for bank credit that developed following the failure of the Penn Central and its destabilizing impact on the commercial paper market. In May 1973 Regulation Q ceilings were also eliminated on longer maturity CD's to encourage commercial banks to maintain a more balanced structure of deposits by lengthening their average CD maturity.

Regulation D, under which the Federal Reserve establishes reserve requirements, has also been used in recent years in an attempt to affect the growth and composition of CD's. In June 1973 the Federal Reserve introduced a new 8 per cent marginal reserve requirement (3 per cent in

addition to the existing 5 per cent time deposit reserve ratio) on issues of CD's and bank-related commercial paper that exceeded the amount outstanding at that time. This action was taken in a period when a rapid expansion in bank credit was being financed in large part by CD's and was designed to moderate this expansion. The rapid expansion continued, however, and the marginal reserve requirement was raised further in September 1973 to 11 per cent. When credit demands subsequently moderated, the marginal reserve requirement was returned to 8 per cent in December 1973.

In 1974 the Federal Reserve made two additional changes in Regulation D aimed at lengthening the maturity structure of commercial bank CD's. The first of these actions, taken in September 1974, eliminated the marginal reserve requirement on CD's of 120 days or more while retaining it on CD's of shorter maturity. Consequently, CD's of 120 days or more had a reserve requirement of only 5 per cent compared to a marginal 8 per cent requirement on shorter maturities. In November of 1974 the marginal reserve requirement on the shorter maturity CD's was also eliminated. At the same time, however, the basic reserve requirement for CD's maturing in less than 6 months was raised to 6 per cent while the basic reserve requirement on CD's with longer maturities was lowered to 3 per cent. There appears to be some evidence that these actions have partially succeeded in inducing banks to lengthen their average CD maturity. In the first half of 1976 the average maturity of outstanding CD's at weekly reporting banks was 2.8 months, higher than in any previous year for which the information is available. Shortly after the November change in Regulation D, one large bank began to offer floating rate CD's with an initial maturity of 360 days or longer at a yield tied to its posted rate on 90-day CD's. This action was at least partly motivated by the desire to take advantage of the lower reserve requirements on longer-term CD's.

PRIMARY MARKET SUPPLY

Many factors figure in bank decisions regarding the issuance of CD's. Among them are: (1) the profitability of investment outlets for the new funds and (2) the outlook for renewals at maturity. Most banks establish a flexible limit on total CD's issued. This limit may be expressed in dollars or, more likely, as a per cent of total deposits.

Although a bank often will negotiate with a large or important lender, it usually has a set of "base rates," expressed in eighths, for various maturities. The bank adjusts these rates according to its eagerness for

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new deposits, and a very small change often results in appreciable increases or decreases in deposits. Most large money market banks will issue CD's to any corporation, bank, or organization without having had any previous relationship with the depositor. Indeed, CD sales may afford the bank the opportunity to acquire new customers. A bank may refuse to issue a CD if the deposit consists of funds which otherwise would constitute the corporation's normal demand account.

Although CD's are issued by banks of all sizes throughout the country, 45 per cent of the total outstanding in the middle of 1976 originated in the New York and Chicago Federal Reserve Districts, which contain the majority of prime-name banks. New York City accounted for 34 per cent. Federal Reserve surveys indicate that a relatively small proportion of the CD's of New York and Chicago banks, typically around 5 per cent, are held by corporations for tax and dividend purposes.

PRIMARY MARKET DEMAND

The CD appeals to corporate treasurers interested in maximizing returns on their liquid balances to such an extent that nonfinancial corporations dominate the demand side of the CD market. Other depositors include states and political subdivisions, foreign governments, central banks, individuals, and a wide range of institutional investors, including dealers who from time to time take CD's directly from the issuing banks. For example, dealers augmented their positions in this fashion in the early spring of 1970 in hopes of realizing a capital gain in a situation of declining market rates.

Like banks, corporations usually set flexible ceilings on their CD holdings, often limiting them to a per cent of their Government security holdings. In addition, a corporation may set a limit on total holdings of a particular bank's CD's. Some corporations prefer the certificates of banks with which they maintain other important accounts or credit lines. Others seek a more impersonal approach and limit themselves largely to prime CD's. Purchasers try to avoid maturity dates falling on a weekend or holiday so that income will not be sacrificed before the funds can be reinvested. If a corporation is reasonably sure it will not need its funds prior to maturity, it may purchase CD's from a smaller regional bank. Since these CD's are less marketable than prime CD's, they generally offer the holder a higher yield.

SECONDARY MARKET

Although most original purchasers hold their CD's to maturity, the existence of an organized secondary market is of vital importance to

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prime-name banks in attracting corporate funds. Participants in this market show a marked preference for prime CD's, chiefly because of their greater marketability. Corporations may enter the market at any time: on the selling side when they wish to raise cash or to realize a profit, or on the buying side when they want maturities shorter than can be acquired in new issues.

Through most of the 1960's, activity in the secondary CD market—as measured by daily average dealer transactions and daily average dealer positions—was fairly stable. On an annual basis daily average dealer transactions were generally in a range of $50 to $60 million, while daily average dealer positions ranged from $200 million to $350 million. In periods when Regulation Q ceilings effectively prevented the marketing of new issue CD's, however, secondary market activity fell sharply. In 1969, for example, daily average dealer positions fell to $27 million and daily average dealer transactions plummeted to $9 million. Since mid-1970, the rapid growth in the new issue CD market has been paralleled by rapid growth in the secondary market. By 1975 daily average dealer positions had risen to $1,432 million and daily average dealer transactions had soared to $806 million.

The heart of the secondary market is located in New York City. Since many of the largest corporations have accounts at New York banks, transactions between dealers and customers can be conducted with ease. CD's of out-of-town banks are frequently issued and redeemed through their New York correspondents. This saves the investor the trouble and expense of presenting them in another city and thus enhances their marketability. New York City money market banks will lend funds to dealers against CD's at the same rate as for call loans secured by Government securities. Regulation Q permits a bank to extend a loan against its own CD, but only at a rate 2 per cent in excess of the rate on the instrument. In no case, however, may a bank purchase its own CD in the secondary market.

Dealers mainly trade in prime CD's and in denominations of $1.0 million. Rates fluctuate in response to money market conditions. Transactions may be either for immediate or regular delivery, but the former predominates since payment is usually in Federal funds. A dealer will bid more aggressively for CD's if he thinks rates will fall and this helps to narrow the spread between bid and asked quotations.

The rapid growth in the secondary CD market, both in absolute terms and relative to the secondary Treasury bill market, occurred despite the

greater degree of heterogeneity among CD's as compared with bills. While large blocks of Treasury bills represent a homogeneous asset type with common rates, maturities, denominations, etc., the CD, by contrast, is likely to come in a greater variety of contractual terms. Thus, the feature that makes the CD an effective fund-raising device for bankers also impedes large-scale secondary trading. Issuing banks will rarely split or consolidate certificates to aid secondary market transactions.

CD'S AND RESERVE ADJUSTMENT

The growth and development of the CD market has provided banks with another means of reserve adjustment. In addition to borrowing from the Federal Reserve, buying Federal funds, or liquidating short-term assets, a bank may now acquire additional funds by simply raising its rate payable on CD's. Thus far, this technique has been used primarily by money market banks. Since owners of short-term funds are responsive to interest rate differentials, banks have been known to acquire millions of dollars of new deposits in a single day by this method. Banks also make use of the secondary market in adjusting reserve positions by trading in CD's of other banks in much the same fashion as they trade in the markets for other secondary reserve assets.

Commercial Paper*

by Joy S. Joines and Jane F. Nelson

Commercial paper refers to short-term unsecured promissory notes sold by large businesses at a discount to dealers, institutional investors, and other corporations. Since the notes are unsecured and bear only the name of the borrower, the market has generally been dominated by large corporations with impeccable credit ratings. Notes are issued in multiples of $1,000, ranging upward to $5.0 million or more. Maturities may vary from 30 to 270 days. Paper maturing beyond 270 days must be registered with the Securities and Exchange Commission, and this requirement excludes the use of maturities greater than 270 days.

Since about 1920, when the General Motors Acceptance Corporation pioneered in the placing of paper directly, commercial paper has been categorized as either dealer paper or directly placed paper. The first type is sold by borrowers to dealers, who in turn sell it to investors in the market. There is no secondary market. Directly placed paper, on the other hand, is sold by the borrower to the lender directly, bypassing the dealer. Due to the necessity of maintaining a trained staff and a complex network of contacts, only a relatively few, very large finance companies and bank-related companies have placed paper directly in recent years.

HISTORY OF COMMERCIAL PAPER

The history and development of commercial paper have been almost exclusively American. In its early use, commercial paper was issued by a buyer to a manufacturer or seller in payment for a specific shipment of goods. The recipient usually endorsed the note and sold it either to his own bank or to a dealer specializing in such paper. Early notes carried the names of both maker and payee and were issued in odd denominations, according to the value of the transactions.

In the 1920's, borrowers included manufacturers, wholesalers, and retailers in a wide variety of product lines. Virtually all paper was handled by dealers, and banks held by far the largest portion of the amount outstanding. In our system composed of thousands of banks, and espe-

* This article relies heavily for historical information on the following excellent work: Richard T. Selden, **Trends and Cycles in the Commercial Paper Market**, National Bureau of Economic Research, 1963.

cially before the Federal Reserve System was established in 1914, the commercial paper market allowed banks, in effect, to make loans outside their local market areas. Thus, commercial paper provided a means whereby idle bank funds could be shifted from one part of the country to another.

Although no secondary market existed, banks regarded commercial paper as highly liquid because the impersonal nature of the loan usually meant there would be no requests for extensions or renewals. Moreover, this paper provided banks with an opportunity to diversify their portfolios with instruments whose rates of interest compared favorably with yields on alternative investments. Since borrowers were subjected to thorough credit investigations and were required by dealers to maintain open credit lines with banks equal to the amount of paper outstanding at all times, commercial paper proved a relatively safe investment. After 1914 paper defined as "eligible" by the Federal Reserve had the additional advantage of being rediscountable when banks needed temporary funds.

Although the volume of directly placed paper increased during the 1920's, the total volume of commercial paper outstanding declined. One factor contributing to this decline was the great bull market in stocks in that period. Rising stock prices apparently induced many borrowers to meet their needs for working capital by floating new stock issues. Furthermore, between 1929 and 1933, when the demand for short-term business credit was drastically curtailed as the economy plunged into depression, the outstanding volume of commercial paper fell precipitously.

From 1933 to the outbreak of World War II, the amount outstanding increased fairly steadily, reflecting general economic improvement, the growing role of consumer credit in financing consumer durables, and the rapid rise of finance companies. Consequently, by 1941 commercial paper outstanding had returned to the levels prevailing in the first half of the 1920's. The dearth of consumer goods during World War II produced a decline in outstandings from 1941 through 1945. In the postwar period, however, the amount outstanding rose from $178 million in January 1946 to $9.3 billion in December 1965. During the next four and a half years, the volume of commercial paper rose rapidly, reaching a level of $40.9 billion in May 1970. In June of that year, however, the bankruptcy of Penn Central Railroad resulted in a wave of liquidation of commercial paper, and it was not until late 1973 that the volume of

commercial paper outstanding reached its earlier peak. As of June 1976 commercial paper outstanding totaled $50.0 billion.

BORROWER CHARACTERISTICS

To the mid-1960's. The most salient characteristic of the commercial paper market between the 1920's and the mid-1960's was the relatively rapid growth of directly placed paper. General Motors Acceptance Corporation began placing paper directly in 1920, and several other large finance companies soon adopted the practice. There was a sharp, though temporary, decline during the Great Depression, but by 1935 direct paper outstanding equaled the volume of dealer paper. During World War II direct placement ceased entirely but was resumed shortly after the end of hostilities. The volume of directly placed paper grew rapidly and at the end of 1965 accounted for 80 percent of the total paper outstanding.

About two dozen large finance companies account for most of the volume of nonbank-related directly placed paper. These companies, such as General Motors Acceptance Corporation and CIT Financial Corporation, continually raise funds to lend, and short-term borrowings are essential between sales of long-term debentures. For these firms, bank borrowing is a less important source of funds than commercial paper. A large concern may have over $1.0 billion of commercial paper notes outstanding at any time, although several hundred million is more typical. However, the maintenance of the large separate sales force necessary to place paper directly is justified not so much by the total value of the notes outstanding as by their almost daily issuance.

In addition to the large finance companies, a number of smaller finance companies entered the commercial paper market after the 1920's. Many of these companies, representing the fields of sales finance, personal loans, and business finance, relied primarily on bank credit to meet their short-term needs and used the commercial paper market as a supplementary source. Such concerns sold their paper through dealers and accounted for the bulk of dealer paper outstanding in the early 1960's. Thus, finance companies dominated both the directly placed and dealer markets prior to 1966.

While finance companies were ascending in influence, the number of manufacturers, wholesalers, and retailers decreased significantly from 1920 to 1966. In general, firms in these lines do not sell paper on a continual basis but use it to help finance seasonal or special needs,

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such as inventory accumulation. For most of these issuers, the commercial paper market was traditionally a less important source of funds than bank borrowing.

Since the mid-1960's. From 1920 to 1965, the total number of borrowers fell steadily, from about 4,000 to slightly over 300. This long downward trend was reversed in 1966, however, and by 1976 the number of borrowers had risen to over 700. The turnaround paralleled the spectacular $41 billion increase in commercial paper outstanding from the end of 1965 to mid-1976. The impetus for this expansion can be traced directly to the period of tight money in the first nine months of 1966 when many businesses, unable or unwilling to curtail their spending plans, were forced to seek new sources of funds to supplement or replace bank loans.

Despite the easier credit conditions which prevailed in 1967 (and 1968), the volume of paper continued to increase. Of the several factors which contributed to this increase perhaps the most important was a legacy of the previous year's credit scarcity: a new awareness by corporate treasurers of the desirability of having alternative sources of funds. Firms were impressed with the dependability of the commercial paper market throughout 1966 and many of those eligible to tap it wished to establish contacts as insurance against another possible squeeze. Companies which had entered the market on a more or less emergency basis remained active in order to maintain contacts and to preserve a desirable flexibility in their financial programs. The commercial paper market received another big boost during the prolonged 1969 period of credit stringency when businesses, and finally banks themselves, turned to the market to fill their needs. In that year alone the growth of commercial paper volume was $11.4 billion, more than the total amount outstanding at the end of 1965!

The rapid growth of the commercial paper market in the latter half of the 1960's was accompanied by significant changes in the composition of borrowers and the type of paper sold. In particular the period was characterized by relatively faster growth in dealer paper, since many of the new entrants in the market were industrial corporations and utilities unequipped to place paper directly. In addition, the expansion of several prominent investment houses into the commercial paper field spurred competition and resulted in more active solicitation of business. By the end of 1969 dealer placed paper had risen to 36.2 percent of total commercial paper outstanding. Since then, the dealer placed share of

commercial paper outstanding has been fairly stable; in June 1976 it was 37.6 percent.

In addition to the growth of dealer paper as a percent of total paper, the latter half of the 1960's witnessed an increase in the average size of firms raising funds in the market. The bulk of the new entrants were large, highly regarded corporations, and as the number of participants rose and the volume outstanding soared, the nation's largest corporations came to dominate the market. Paper sold by these new entrants was eagerly sought by investors, often in preference to paper sold by smaller companies which had been in the market for some time. Many large corporations adopted the policy of purchasing only prime-rated paper. Also, several state legislatures stipulated that only prime name paper could be purchased by state controlled funds, and in several states this restriction extended to state chartered savings banks. In the face of such competition, a number of smaller firms, principally regional finance companies, were forced to withdraw from the national market. The withdrawal from the national market of the smaller nonprime finance companies was partially offset, however, by the establishment of captive finance companies by large manufacturing and retailing concerns.

Two other particularly interesting developments accompanied the rapid growth in the commercial paper market in the second half of the 1960's. These developments were the emergence of utilities and commercial banks as major issuers. Fifteen years ago there were no utilities in the market. By 1970, over 150 utilities were active in the market. Utilities have always depended heavily on sales of long-term bonds and flotations of stock to finance capital improvement and expansion. Bank loans have been the chief source of interim funds. As members of a regulated industry, these companies are extremely cost-conscious and were especially sensitive to the escalation of interest rates since 1965. Quite naturally, therefore, utilities were attracted initially by the relatively lower cost of commercial paper. But utilities were hurt by the shrinkage in bank credit in 1969, and because of their dependence on short-term interim borrowing they were willing to pay unfavorable rates to secure these funds.

The sale of commercial paper by banks through their affiliates was one of the more striking ways in which large banks sought to offset the dramatic runoff in their CD deposits in 1969. From $1.2 billion outstanding in June 1969, the first month for which data are available, the

total of bank related paper jumped to $4.3 billion at year-end and $7.6 billion in May 1970. Between June and December 1969, the increase in bank related paper alone accounted for over one-half of the increase in total commercial paper outstanding.

In the summer of 1970, however, the Federal Reserve Board imposed reserve requirements on funds raised by issuance of commercial paper by bank affiliates and also eliminated Regulation Q rate ceilings on CD's maturing in 30 to 89 days. As a result, much of the advantage of bank paper was eliminated, and the volume of such paper declined to $2.3 billion by the end of 1970. Since 1970, bank paper outstanding has grown at a moderate pace, reaching a level of $8.0 billion by the middle of 1976. At that time almost 80 percent was directly placed, reflecting the extensive network of customer contacts banks had developed previously in conjunction with CD sales.

LENDER CHARACTERISTICS

On the lending side of the commercial paper market, the most striking change from the 1920's in the postwar era has been the substantial increase in the number of nonbank investors and the accompanying decline in the role of banks. While banks were at one time important holders of dealer paper, they have always been reluctant to hold directly placed paper. Before World War II, this reluctance might have stemmed from the disapproval of paper that arose mainly out of financing consumption rather than production. In the postwar period, bankers also entered the consumer credit field, and some hesitated to finance competitors in this area. Moreover, in 1969 banks themselves became sellers of commercial paper. In addition, the tremendous growth in alternative secondary reserve assets, such as Treasury bills, has lessened the importance of commercial paper to bank portfolios.

By far the most important new lenders in the market are nonfinancial corporations, principally industrial corporations and utilities. Rising interest rates in the postwar period, especially since the mid-1960's, have induced corporate treasurers to look intensively for appropriate short-term investments. Commercial paper, CD's, and short-term Government securities are the three most popular means of employing temporary cash funds. Commercial paper generally offers a greater yield than Government securities of equal maturity, but for a small additional risk. In addition, most direct placers of paper have a "gentleman's agreement" with the investor to buy back the paper should the latter experience a sudden need for funds. Besides banks and nonfinancial

corporations, trust funds, college endowment funds, and insurance companies also find commercial paper an attractive investment.

MARKET CHANGES

In the postwar era, practices in the commercial paper market came to differ significantly from those in the 1920's. For one thing, the number of both dealers and borrowers declined sharply. This was due mainly to the emergence of large finance companies which relied almost exclusively on the commercial paper market for their working capital. While the largest of these companies placed their paper directly, those which borrowed chiefly through dealers tended to dominate the dealer market. Unlike industrial and commercial companies, finance companies that borrowed through dealers were in the market for large amounts on a more or less continuous basis. Dealers, therefore, found it more profitable to work with these and tended to neglect borrowers who sought funds only intermittently. As the number of borrowers declined, competition among dealers became more intense and attrition took its toll. Currently there are about ten New York-based national dealers in commercial paper, a few of which distribute the bulk of dealer-placed paper.

The growth of finance companies contributed to improving the quality and liquidity of commercial paper, broadening the range of maturities, and lowering the cost of borrowing. The quality of dealer paper improved because the fewer borrowers per dealer permitted closer scrutiny of the financial condition of borrowers. Moreover, the borrowers themselves were larger, better-known firms with higher credit ratings. Maturities became better suited to investors' purposes as direct borrowers tailored terms to coincide with investors' needs for cash. For instance, maturities of less than 30 days became increasingly common on directly placed paper. Large corporations and insurance companies, seeking to economize cash balances, were the most frequent purchasers of this so-called "weekend paper." The issuance of very short-term paper was also adopted by finance companies which placed their paper through dealers. Liquidity improved because of the trend toward shorter maturities and because direct borrowers frequently agreed to repurchase their notes in case lenders should suddenly need cash.

The cost of borrowing was lowered as a result of increased competition among dealers and also as a result of declining interest rates during the Great Depression. In the 1920's, dealer commissions were usually a flat 1/4 of 1 percent, regardless of maturity. This amounted to an annual cost of 1 percent on three-month paper. When short-term

interest rates dropped below 1 percent in the 1930's, the commission comprised more than half of the total borrowing cost. In the face of this movement dealers abandoned the flat commission and began to derive their compensation from the varying spread between buying and selling prices. The minimum spread for the best paper declined to 1/4 of 1 percent per annum and then to 1/8 of 1 percent per annum.

Collapse of the Penn Central. In retrospect, it is apparent that the rapid increase in the number of large corporate borrowers tapping the paper market in the late 1960's did not reflect a concurrent rise in the quality of outstanding paper. The turn toward more restrictive monetary policies accentuated financial strains developing in the late 1960's, and the reduced availability of bank loans probably forced many less financially sound borrowers into the paper market. At the same time, in view of the high (and presumably) risk-free returns, the commercial paper market was experiencing the peak of investor enthusiasm, and investors were lulled into associating borrower size with financial strength. The collapse of the Penn Central in June 1970, at a time when it had $82 million in commercial paper outstanding, had an immediate impact. Outstanding nonbank paper declined by $3.0 billion between May and July. More significant, however, was the overall impact on investor attitudes in the market. Investors became much more concerned with the quality of paper and subjected potential borrowers to a degree of financial scrutiny that only the most creditworthy could bear. The entry of new borrowers in the commercial paper market has consequently slowed significantly since the late 1960's. And while the market recovered quickly from the Penn Central crisis, the volume of paper has risen at a much more moderate pace in recent years. By January of 1973, nonbank paper had risen back to its May 1970 level of $33 billion and by June 1976 totaled $42.0 billion.

CYCLICAL BEHAVIOR OF COMMERCIAL PAPER

The principal advantage of commercial paper over bank credit has traditionally been its lower cost. Its total cost generally has been below the prime rate on bank loans, even after allowing for the dealer commission charge (or the administrative cost of direct placement) and the cost of maintaining open credit lines as insurance. From 1960 through 1962, the cost advantage of commercial paper was particularly pronounced and explained in large part the sharp increase in commercial paper outstanding which occurred during that interval.

Dealer paper has often declined during the expansion phase of the

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business cycle and expanded during the recession phase. This may be explained by the fact that bank rates are sticky while commercial paper rates are flexible, closely paralleling the fluctuations in Treasury bill rates. As rates fall during recession periods, borrowing through the commercial paper market becomes relatively cheaper and borrowers shift from bank loans to paper. The converse tends to occur during expansion periods.

A factor on the supply side is also important in explaining the cyclical behavior of dealer paper. Banks still hold a sizable fraction of dealer paper, and during recessions, when customer loan demand slackens, they become more willing to supply funds to the dealer paper market. In the expansion phase, on the other hand, banks prefer to extend customer loans and, therefore, buy less dealer paper than during recessions.

In 1966 and again in 1969, the usual cyclical pattern did not prevail. The chart shows that the volume of dealer paper outstanding soared even though the spread narrowed, as in 1966, and finally, in mid-1969, became negative. During these two periods when restrictive monetary policy sought to cool a booming economy, the availability of funds, rather than their cost, became the dominant consideration to corporate borrowers.

In late 1970 dealer placed commercial paper displayed a more typical cyclical behavior as declining interest rates caused the rate spread to become favorable to the issuance of commercial paper. When interest rates rose in early 1971, dealer paper volume again contracted as the favorable rate spread decreased and then turned negative.

The pronounced cyclical commercial paper decline during the economic expansion of 1972-1973 reflected not only firming money market conditions but also the effect of informal but effective restraints on the prime rate. Bank loans at the artificially low prime rate became extremely attractive, and paper volume declined substantially. With the institution of the two-tiered prime in 1973, the prime rate for large corporations adjusted rapidly to high money market rates and the volume of dealer paper subsequently turned upward.

The volume of dealer placed commercial paper rose again in the latter part of 1974 when the spread between the prime rate and the commercial paper rate shot up. Since then, the volume of dealer placed commercial paper outstanding has changed little despite a very favorable spread. It must be remembered, however, that the supply of commercial paper depends not only on its rate relative to the prime rate but

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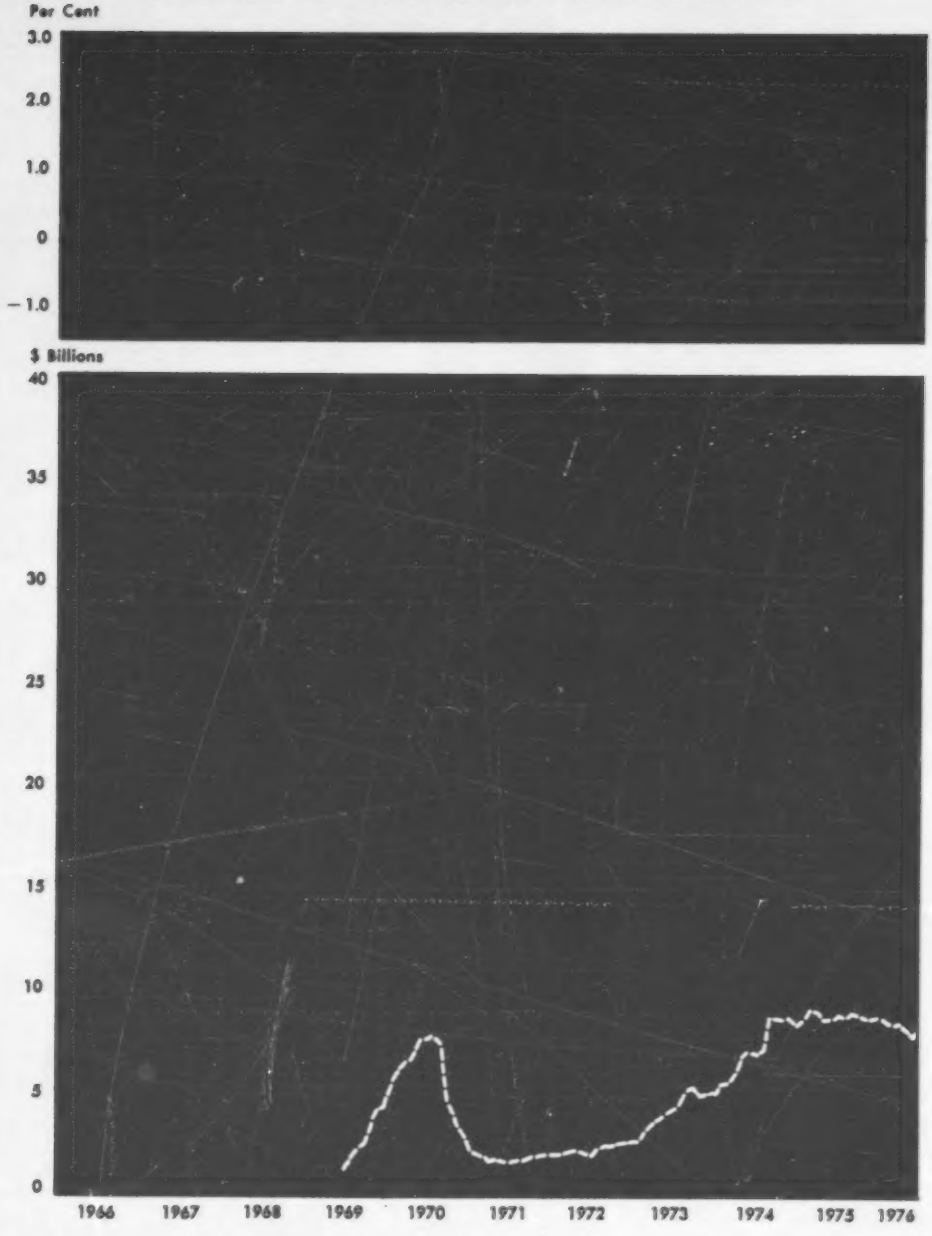
RATE DIFFERENTIAL AND COMMERCIAL PAPER OUTSTANDING



Sources: Federal Reserve Bulletin and Federal Reserve Bank of New York, "Commercial Paper Release (monthly)."

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also on the demand by nonfinancial corporations for short-term funds versus long-term funds. In 1975 and 1976 nonfinancial corporations actually paid down a large amount of short-term debt by substituting long-term financing. Consequently, the relatively stable level of dealer placed commercial paper must be viewed against the background of sharply falling business loans at banks.

CONCLUSIONS

In a relatively short period of time, the commercial paper market grew to be a major sector of the money market. Large corporations have accepted commercial paper as an important and reliable source of short-term credit, and investors are attracted to the high returns that can be obtained at relatively low risk from large creditworthy borrowers. Investors have become more selective since the Penn Central collapse, but the commercial paper market can be expected to continue growing at the moderate pace of recent years.

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Bankers' Acceptances

by Joy S. Joines

In recent years, most notably since 1955, there has been an impressive revival in the use of bankers' acceptances in financing foreign trade. This growth ends a long period, running from the early 1930's through World War II, during which the outstanding volume of acceptances denominated in dollars fell from $1.7 billion in 1929 to $110 million in 1944. In spite of their recent growth in this country, bankers' acceptances remain one of the least familiar of all money market instruments.

WHAT IS A BANKERS' ACCEPTANCE?

Bankers' acceptances represent one type of a broad class of credit instruments known as bills of exchange. Bills of exchange, in turn, are drafts, or orders to pay specified amounts at a specified time, drawn on individuals, business firms, or financial institutions. When the drawee formally acknowledges his obligation to honor such a draft—usually by writing "Accepted" or "I Accept" with the appropriate signature across the face of the draft—it becomes an "acceptance." An acceptance which represents the liability of a well-known bank is, for obvious reasons, a more desirable credit instrument than one drawn on a little-known firm or individual.

Ordinarily banks "open acceptance credits," or accept drafts, on behalf of their customers, usually under letters of credit. A customer on whose behalf a draft is accepted is obligated to provide the bank with funds for payment on or before the maturity date.

Legally, acceptances are negotiable instruments which the payee or holder in due course may discount in the money market. Both the drawer, who endorses the acceptance when he sells it, and the accepting bank are obligors of the draft, and this makes acceptances an example of what is known in money market parlance as "two-name paper." The resulting high degree of safety renders the acceptance an attractive short-term investment.

ACCEPTANCE FINANCING

Bankers' acceptances typically arise from letters of credit in foreign trade transactions. For example, a domestic concern wishing to import goods from abroad may request its bank to issue a letter of credit on its behalf in favor of the foreign seller. If the bank finds the customer's

credit standing satisfactory, it will issue such a letter, authorizing the foreign seller to draw a draft upon it in payment for the goods. Equipped with this authorization, the foreign exporter, on shipping the goods, can discount the draft with his bank, thereby receiving payment immediately. The foreign bank, in turn, forwards the draft together with appropriate shipping documents to its correspondent bank in this country with instructions respecting its disposition. Generally the U.S. correspondent bank will present the draft for acceptance at the drawee bank, which then forwards the shipping documents to the importer, who now may claim the shipment. The correspondent bank may be instructed to hold the acceptance until maturity as an investment for the foreign bank. Or it may be instructed to offer the acceptance for sale in the market and credit the deposit account of the foreign bank. In any event, the ultimate holder of the acceptance is the party actually financing the transaction.

The accepting bank may, of course, buy the acceptance which it originated. In such a case, it earns the difference between the purchase price and the face amount which must be reimbursed by the customer on whose behalf the acceptance credit was opened. It also earns the commission charged for the letter of credit. When the bank follows such a course it is actually financing the transaction, and its position is much the same as when it extends a loan directly to the customer. On the other hand, if some other party buys and holds the acceptance, the originating bank has tied up no funds. It has merely lent the prestige of its name and assumed a contingent liability, for which it collects a small fee.

While individual banks often acquire acceptances drawn on themselves, many prefer to hold instruments drawn on other banks. The latter instruments offer some advantages, especially with respect to marketability. When sold, under endorsement, they become three-name paper; that is, they carry the name of three obligors—the drawer and two banks. Three-name paper is especially attractive to foreign investors, some of whom purchase only this type. It is not uncommon for accepting banks to sell to dealers their acquisitions of acceptances drawn on themselves and to replace these in their portfolios with instruments drawn on other banks. Such a practice is known in market terminology as a "swap."

ACCEPTANCE TERMS

Maturities on bankers' acceptances range from 30 to 180 days, but 90 days is most common. Maturities can often be tailored to cover the entire period needed to ship and dispose of the goods financed. With regard to both liquidity and safety, bankers' acceptances are almost as

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attractive as Treasury bills. This is reflected in the relatively low market yields on acceptances, which generally run only slightly higher than Treasury bill yields.

Market yields, however, do not present a true picture of the costs of acceptance financing to the borrower, since the accepting bank levies fees for this service. Banks customarily charge a minimum of 1½ per cent per annum, or ⅛ of 1 per cent per month, for accepting a draft on behalf of nonbank customers of the highest credit rating. Less creditworthy customers pay higher fees, while charges are somewhat lower when the acceptance is in behalf of a foreign bank. The cost to the borrower, therefore, is equal to the fee plus the discount on the acceptance. In some cases the discount is absorbed directly, as in the case where a foreign bank draws a draft on a United States bank in order to create dollar exchange. In others, the discount is absorbed indirectly. For example, in a trade transaction the exporter ostensibly pays the discount, but this is generally passed on to the importer (borrower) in the form of a higher cost for the goods.

HISTORY

The history of acceptances in Europe dates to the pre-modern period. Europeans have confidently used these instruments for years and in many instances prefer them to other liquid investments. In this country, however, they have not been so popular, although they were widely used in the period before the Civil War. When the Federal Reserve System was established in 1914, only a few private banks and other nonbank institutions engaged in acceptance financing.

In its early years, the Federal Reserve undertook to promote the development of an acceptance market and to this end stood ready to buy bankers' acceptances at quoted prices. From 1915 through 1934 the Federal Reserve Banks were fairly active buyers, but from 1934 to 1955 purchases were made only occasionally. During the latter period the Reserve Banks set their buying rates so high relative to market rates that they were offered few acceptances. Prior to 1955, they did not sell acceptances from their own account but held all they purchased to maturity. In their role as agents for foreign central banks, however, they operated on both sides of the market.

Partly in response to Federal Reserve efforts, the acceptance market grew steadily until 1929. Member banks and private concerns created an increasing number of acceptances, and except for a slight setback in the 1920-21 recession, the volume soared to a peak of $1.7 billion in 1929.

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This auspicious beginning was swamped, however, in the depression of the 1930's, and the 1929 figure was not equaled again until late 1960.

In 1955 the Federal Reserve Banks were authorized both to buy and sell acceptances for their own account in the hope that Reserve Banks' participation would strengthen and broaden the market. Acceptances grew only gradually through 1965 to a level of $3.4 billion at the end of that year. In the succeeding decade, however, rapid growth of acceptances resulted from the rapid expansion in U. S. and world trade. By the end of 1973 outstanding acceptances had risen to $8.9 billion. In 1974 the volume of acceptances more than doubled to $18.5 billion. Since then growth of acceptances has slowed; in June 1976 there were $19.8 billion of acceptances outstanding.

RECENT USES

Most acceptances in this country arise from three types of transactions: (1) the financing of U. S. imports, (2) the financing of U. S. exports, and (3) the financing of goods stored in or shipped between countries. The third category is generally called "third-country" bills. All of these categories have grown rapidly since 1965. Acceptances to finance imports into the U. S. have grown from $792 million at the end of 1965 to $4,384 million in June 1976, while acceptances to finance exports from the U. S. grew from $974 million to $4,308 million over the same period. The most rapid growth in acceptances, however, has been due to the growth in third-country bills, which increased from $1,564 million at the end of 1965 to $10,276 million in June 1976. In 1974 alone third-country bills expanded by $7.4 billion. A substantial proportion of the dramatic rise in third-country bills resulted from increased use of the U. S. acceptance market by the Japanese to finance their international trade.

Acceptances also arise to finance goods stored or shipped in the United States and to finance the extension of dollar exchange credits to foreign countries. The latter are called "dollar-exchange" bills. This type of financing is especially attractive to foreign banks in countries whose exports to the U. S. are highly seasonal. Through the dollar-exchange acceptance, those banks seek to provide themselves with dollars to finance their customers' imports during seasons when export earnings are low and dollars are in short supply. In later months, when exports expand, the acceptances are paid off. Dollar-exchange bills and bills to finance goods stored or shipped in the U. S. constitute a very small fraction of total acceptances outstanding.

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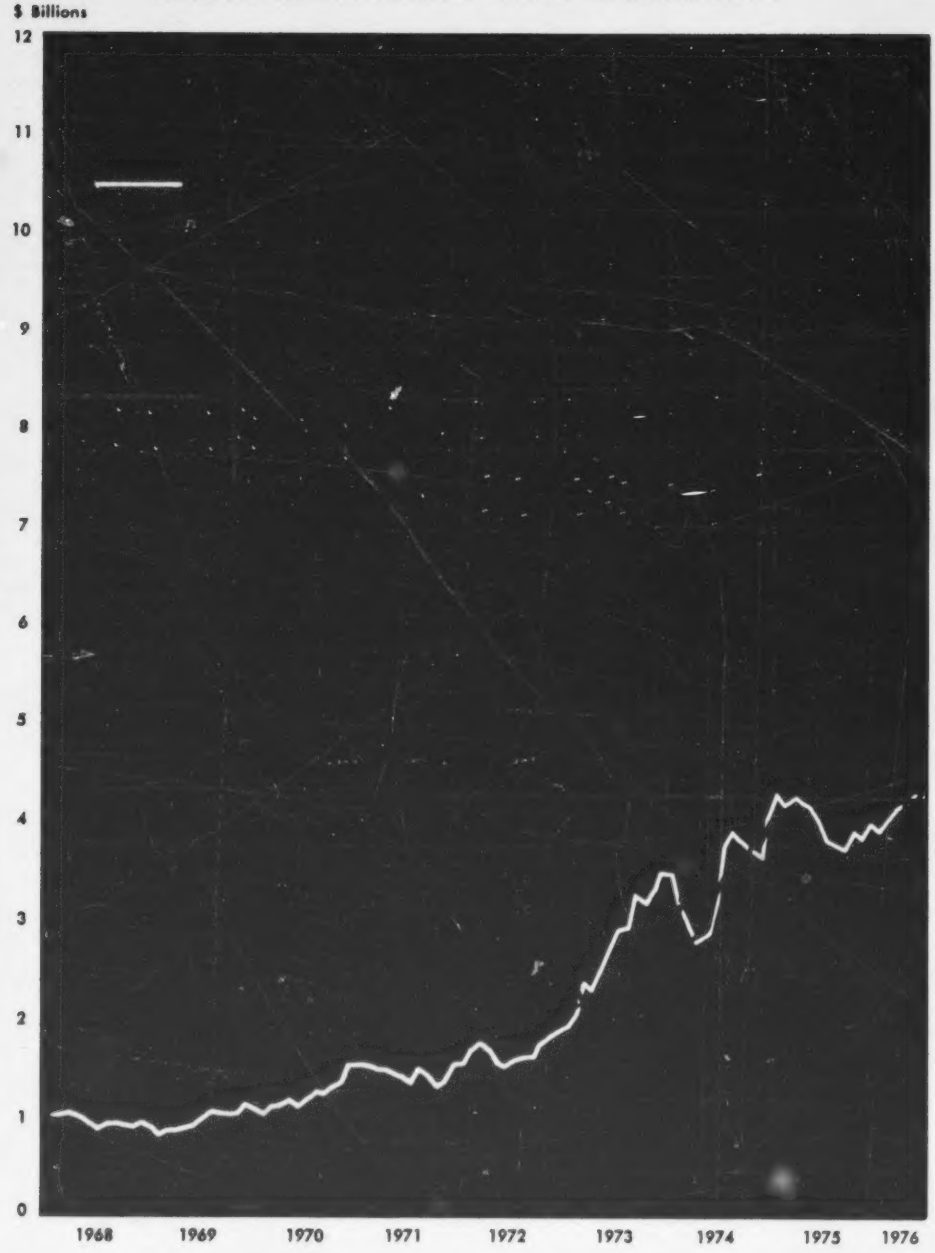
ACCEPTANCES OUTSTANDING BY KIND OF TRANSACTION



Sources: **Federal Reserve Bulletin** and Federal Reserve Bank of New York, "Bankers' Acceptances Survey (monthly)."

THE ACCEPTANCE MARKET

Despite its recent growth, the market for bankers' acceptances remains far less extensive than those for other market instruments such as CD's, Treasury bills, or commercial paper. The most active institutions in the market are foreign banks and financial institutions, the Federal Reserve Banks (especially the New York Bank), a relatively small group of large banks, and a small group of nonbank dealers. Recently, however, private domestic investors have become increasingly interested in acceptances.

There are only a handful of dealers in the bankers' acceptance market, and the majority of these deal primarily in U. S. Government securities and only incidentally in acceptances. Prior to the 1970's dealers generally made a market for acceptances by their willingness to buy and sell on a continuous basis at preannounced posted rates. Since then, however, trading has been done on a negotiated basis, although some dealers post bid and ask prices for informational purposes. The dealers earn their profit through the spread between buying and selling rates which generally ranges from ⅛ to ¼ of a point but can be as large as 1 per cent when rates are changing rapidly. Swaps by accepting banks account for a large part of dealers' volume. Dealers' inventories are usually held at low levels, and in times of brisk demand only a small volume of acceptances is available to nonbank investors.

Under authorization from the Federal Open Market Committee, the Federal Reserve Bank of New York can buy acceptances outright or under repurchase agreements for its own account. On April 1, 1974, the Federal Reserve effected a realignment and modernization of its rules relating to open market operations in bankers' acceptances.* In general, these rules authorize the Federal Reserve Bank of New York to buy (outright and under repurchase agreements) and sell "prime" bankers' acceptances with maturities up to nine months that arise out of (1) the current shipment of goods between countries or within the United States, (2) the storage within the United States of goods under contract of sale or expected to move into the channel of trade within a reasonable time and that are secured by a warehouse receipt or similar document conveying title to the underlying goods. Prior to July 18, 1974, the Federal Reserve limited the outright amount of bankers' acceptances

* Federal Reserve activity in the bankers' acceptances market and criteria for eligibility for purchase by the New York Federal Reserve Bank are discussed in Helfrich, Ralph T., "Trading in Bankers' Acceptances: A View from the Acceptance Desk of the Federal Reserve Bank of New York," **Monthly Review** (February 1976), Federal Reserve Bank of New York.

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that could be held by the System to $125 million. At that time, in view of the sharp growth in acceptances over the previous decade, the limit was increased to $500 million. Subsequently, on November 22, 1974, the limit was further expanded to $1 billion.

In addition to transactions for its own account, the Federal Reserve also buys and holds bankers' acceptances for foreign correspondents, mainly other central banks. To encourage the development of the bankers' acceptances market, the Federal Reserve used to guarantee acceptances it purchased and held for foreign correspondents. In 1974, however, the Federal Reserve concluded that, given the rapid development of the bankers' acceptances market in previous years, this guarantee could no longer be justified. Consequently, on November 8, 1974, it was terminated.

ACCEPTANCE INVESTORS

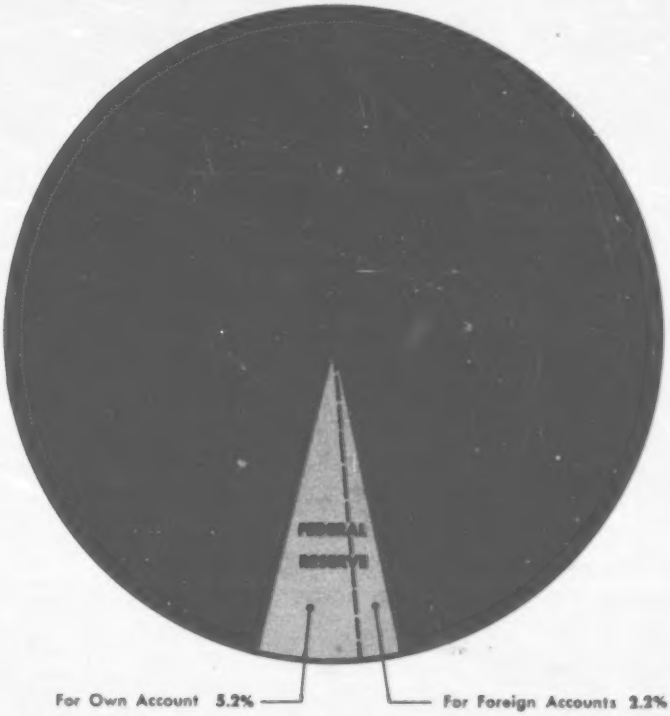
Foreign bank and nonbank institutions are the most important investor group in the market. These have traditionally regarded bankers' acceptances as highly safe and liquid short-term investments. Foreign holders' income from acceptances is not subject to the Federal income tax and because of this, foreign holders realize a higher net yield from acceptances than from Treasury bills. In some countries, however, this advantage is eliminated through reciprocal tax treaties with the United States.

The next most important group is the accepting banks themselves. In June 1976 these banks held 31.2 per cent of the total outstanding and about 87 per cent of their holdings consisted of acceptances drawn on themselves. The share held by the Federal Reserve, both for its own account and for foreigners, was 7.4 per cent at that time.

From the standpoint of banks, acceptances have an important advantage over direct loans. Acceptance financing of customers' credit demands need not involve a charge on the bank's cash reserves, since the bank, as noted earlier, may only be allowing the drawee to use the bank's credit standing. Moreover, bankers' acceptances are a better "secondary reserve" than customer loans. Bankers experiencing reserve losses can readily cover these through the sale of acceptances to dealers, whereas liquidation or rediscounting of customer loans would probably involve greater inconvenience, higher costs, and poor customer relations. On the other hand, bankers' acceptances are complex, require more paper work, and only the larger banks have the name and foreign connections required for success in acceptance financing.

HOLDERS OF BANKERS' ACCEPTANCES

JUNE 1976



Source: **Federal Reserve Bulletin.**

Other investors include nonbank corporations as well as commercial banks which are not engaged in acceptance financing as such. Activity by this group depends in large part upon the relationship of acceptance yields to those of other short-term investments. Lack of complete understanding of the market and the odd-lot denominations of acceptances, however, deter many nonbank investors. Moreover, this group frequently experiences difficulty in finding acceptances to purchase.

Federal Agency Securities

by Jane F. Nelson

In the last decade the importance of the Federal and Federally-sponsored credit agencies in the nation's money and capital markets has grown dramatically. The outstanding debt of these agencies increased from $15.0 billion at the end of 1965 to $117.9 billion in mid-1976. Behind this rapid growth are a number of innovations in Federal budgetary and agency financing practices that have added new dimensions to both primary and secondary markets for agency securities. This article examines briefly the chief characteristics of agency securities, the markets for these securities, and recent developments affecting the relative importance of these markets.

THE ISSUING AGENCIES

Government-sponsored Agencies. Federal Government corporations and agencies, established by law to implement the Federal Government's various lending programs, issue securities to finance their activities. Five privately-owned, Government-sponsored corporations are responsible for most of the growth in the agency market. They are the Federal National Mortgage Association (FNMA), Federal Land Banks, Federal Intermediate Credit Banks, Banks for Cooperatives, and Federal Home Loan Banks (FHLB). Included with the last agency is the Federal Home Loan Mortgage Corporation (FHLMC), all of whose capital stock is owned by the Federal Home Loan Banks. The primary function of the FHLB, the FHLMC, and FNMA is to provide funds to the mortgage and home-building markets. The other three corporations are part of the Farm Credit System, which provides credit primarily to farmers.

Most of the capital stock of the "big five" agencies was orginally owned by the Treasury. In all cases, however, the Treasury's holdings have been redeemed and ownership has passed to member organizations and the general public. While the capital stock of the Federal Home Loan Banks has been owned entirely by member savings and loan associations since 1951, the other four agencies only completed the transition to private ownership following the passage of enabling legislation in the fall of 1968.

Federally Operated Agencies. Federally operated agencies include, among others, the Export-Import Bank, the Federal Housing Administra-

tion (FHA), Farmers Home Administration, Government National Mortgage Association (GNMA), the Tennessee Valley Authority (TVA), and the U.S. Postal Service. GNMA was established in 1968 to assume special assistance, management, and liquidating functions previously conducted by FNMA. The Export-Import Bank supports U.S. exports through loan guarantees and insurance. The FHA provides a system of mutual mortgage insurance for builders, buyers, and mortgage-lending institutions. As a part of the Department of Agriculture, the Farmers Home Administration extends loans in rural areas for farms, homes, and community facilities. The TVA was established by an Act of Congress to assist the development of the Tennessee River and the surrounding area. The Postal Service has the authority to issue debt obligations as needed to carry out its responsibility of operating the postal system. In contrast to other agencies, the Postal Service obligations are not necessarily guaranteed by the U.S., but may be at the discretion of the U.S. Treasury Department.

The Federal Financing Bank. A development that has had a major impact on the borrowing patterns of virtually all the Federally operated agencies was the establishment of the Federal Financing Bank in 1973. Prior to that time, each of the agencies raised its own funds in the financial markets through the sale of its own individual securities. As a consequence, the financial markets were faced with a growing number and variety of agency debt issues, which had various terms and guarantees. The Federal Financing Bank was established to consolidate the borrowing activity of these agencies. It was believed that it would lower the cost of raising agency funds because of the greater efficiency of the resulting fund-raising operation and the greater marketability of the regular Treasury debt issues sold instead.

The Federal Financing Bank can raise funds by borrowing from the Treasury or by selling its debt directly in the financial markets. The obligations acquired with these funds fall into three categories: debt obligations of on-budget and off-budget Federal agencies; assets sold by Federal agencies to the Federal Financing Bank; and Government-guaranteed borrowing by non-Federal borrowers. In practice, the agencies qualified to raise funds through the Federal Financing Bank include virtually all of the Federally operated credit agencies and one Federally-sponsored agency, the Student Loan Marketing Association.

As of June 1976 the Federal Financing Bank held $22.4 billion of Federal and Federally-sponsored agency obligations. It was originally

widely expected that the Federal Financing Bank would raise a significant amount of its funds directly in the financial markets. With the exception of one issue of $1.5 billion of eight-month notes sold in July 1974, however, it has acquired all of its financing directly from the Treasury.

Since the establishment of the Federal Financing Bank, the eligible agencies, whose outstanding securities are described in the remainder of the section, have used it heavily or exclusively as a source of new funds. As of June 1976, seventeen agencies had acquired funds from the Federal Financing Bank. However, four of these agencies—the Farmers Home Administration, the Export-Import Bank, the Postal Service, and the Tennessee Valley Authority—accounted for 83 percent of the total funds supplied by the Federal Financing Bank.

INVESTMENT CHARACTERISTICS

Securities of Government-sponsored and Federally operated agencies consist of short-term notes, debentures, and participation certificates. Neither principal nor interest on most Government-sponsored agency issues is guaranteed by the Federal Government, although both are fully guaranteed by the issuing agencies. In contrast, the issues of Federally operated agencies are fully guaranteed by the Government.

There are three ways in which a new issue may be placed on the market. First, a Fiscal Agent, or middleman, may handle the security and organize his own selling group for distribution. Second, the agency may bypass the Fiscal Agent and place the issue directly with one or more syndicates. Third, the agency may sell the issue directly to the public. In each of these three cases the rate may be fixed, auctioned, or negotiated.

The eligibility of agency issues as investments of regulated financial institutions and as collateral for public deposits depends, to some extent, on the guaranteed or non-guaranteed status of the agency, and the maturity and marketability of the individual issue. Most agency issues are eligible as collateral for Treasury Tax and Loan Accounts and other public deposits. A few are acceptable collateral for all types of accounts which require a specific pledge of Treasury securities. Some, but not all, are eligible as collateral for Federal Reserve advances, and there are some which qualify as legal reserves of savings and loan associations.

Most agency securities bear a fixed rate of interest which, with the exception of the securities of the Farmers Home Administration, is paid semi-annually. Short-term discount notes, which pay interest equal to the difference between the discount price and the par value, were being offered by three agencies in 1976. Two of these, the FHLB and FNMA,

have been selling these notes for many years. They were joined in January 1975 by the Farm Credit System, which began selling Consolidated Systemwide Discount Notes. As of June 1976 outstanding discount notes of these agencies totalled almost $3 billion.

The average maturity of Government-sponsored and Federal agency debt has lengthened considerably since 1969, as shown in the chart. In 1969 and 1970, agency financing was heavily concentrated in short-term issues to avoid being locked into long-term debt at the relatively high interest rates then prevailing. In 1971 and 1972 the agencies, primarily FNMA and the Federal Home Loan Banks, took advantage of lower interest rates to float longer-term issues and thus extend the average maturity of their outstanding issues. At the end of 1973 the proportion of agency debt maturing in less than a year was 30 percent. Since then this proportion has changed little; as of June 1976, it was 31.9 percent. Although the proportion of agency issues competing directly in the money market has declined, the volume of agency debt maturing in less than one year, which was $29.9 billion in June 1976, has continued to rise. The growth in overall agency debt plus the need to maintain a balanced debt structure should insure a key role for agency issues in the money market.

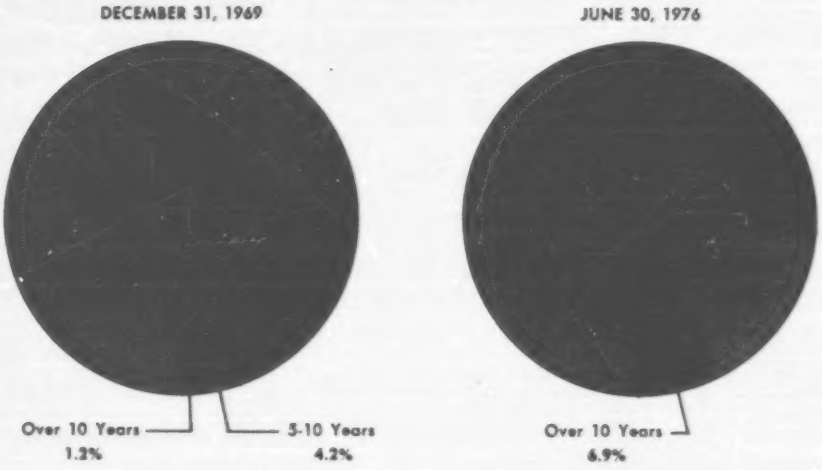
Interest income and principal on most agency issues are subject to all Federal taxes. Some agency issues are exempt from state and local taxes except inheritance and gift taxes. Others, however, are not exempt from any taxes. This is true of obligations of the Farmers Home Administration and securities issued directly or indirectly by FNMA and GNMA.

Call features also vary. Some agency issues are noncallable while others are callable by the issuing agency after a specified period of time. Export-Import Bank notes offer the investor the option of reselling the notes to the agency under certain conditions. Holders of Farmers Home Administration notes may extend the maturity of the notes or redeem them after a specified initial period.

CERTIFICATES OF PARTICIPATION

A certificate of participation (PC) represents a beneficial interest in a pool of agency loans or mortgages. It is a formal credit instrument carrying a contractual interest obligation on a specified principal. In contrast to an outright sale of assets in which the title to the asset actually is transferred to the investor, the investor does not acquire title to any of the pooled assets at any time. Rather, the issuing agency continues to hold the pooled loans and to receive interest and principal

MATURITY DISTRIBUTION OF FEDERAL AGENCY SECURITIES



Source: Treasury Bulletin.

payments on them. These payments, in turn, are used to service the certificates. The Commodity Credit Corporation initiated sales of certificates of participation in a pool of crop loans in 1953, and the Export-Import Bank began selling participations in its loan portfolio in 1962. But the first sale of certificates of participation by FNMA in November 1964 marked their beginning as a significant new instrument of agency financing.

With the passage of the Sales Participation Act of 1966, this method of financing was broadened significantly to include the pooling of assets of at least ten Governmental departments and agencies. The eligible loans include credit extended to farmers, small businesses, veterans, colleges, and numerous types of building projects. Under the terms of the Sales Participation Act of 1966, certificates of participation are, in effect, guaranteed. The law authorizes the selling agency to make "indefinite and unlimited" drawings on the Treasury, if needed, to service the certificates. Because of this provision, the Attorney General of the United States has designated all participation certificates as direct obligations of the United States. By the end of 1966, about $39 billion of loans were eligible for pooling.

Prior to the implementation of the unified budget in fiscal 1969,

certificate sales were not designated as debt in Governmental bookkeeping procedures. Proceeds from these sales were returned to the Treasury to be credited proportionately to the lending authorizations of the agencies represented in the pool. For budgetary purposes proceeds from the sales were counted as negative expenditures, and the budget was reduced correspondingly.

Under the old budgetary system, PC sales expanded rapidly and the volume outstanding reached a peak of $11.2 billion in August 1968. This was greater than the volume of securities outstanding for any single agency. Under the unified budget, however, PC's are considered an integral part of direct Federal debt, and their use has declined sharply. As of mid-1976, only $4.7 billion of PC's were outstanding.

PRIMARY MARKET

To facilitate primary market sales, most agencies have under contract a Fiscal Agent in New York City. One or more agencies may use the same Agent. When an offering is to be made, the Fiscal Agent assembles his selling group of securities dealers, brokerage houses, and dealer banks. Unlike syndicates formed for the sale of a specific stock or bond issue, members of the Agent's selling group do not bid against each other. Rather, each agency offering is made through only one selling group. To establish the price or price range of the new issues, the Fiscal Agent consults with the members of the selling group, the Treasury, the Trading Desk of the Federal Reserve Bank of New York, and the issuing agency regarding maturity, amount, coupon, and price. When the sale date arrives, the price is telegraphed by the Agent to the members of the group who then communicate subscriptions to the Agent. The Agent determines the allotments, which are usually a fraction of investor subscriptions.

This method of sale is used primarily by the five large Federally-sponsored agencies that account for the bulk of agency financing. Other agencies, almost all of which now are acquiring their funds from the Federal Financing Bank, often used other methods. For example, the Farmers Home Administration sold notes, representing long-term insured loans to farmers, directly to investors, primarily commercial banks. The Farmers Home Administration acts as a middleman between farmers and investors, servicing the loan and collecting interest and principal payments, which are forwarded to the owner of the note. The Export-Import Bank sold participations in its loan pool directly to commercial banks on an allotment basis, but in February 1967 it marketed a large issue

through a syndicate for the first time. The Tennessee Valley Authority employed the auction method for selling its short-term paper. Certificates of participation were generally sold through syndicates headed by large brokerage houses and dealer banks.

SECONDARY MARKET

Some agency issues have an active secondary market while others do not. Obligations of the Federal Land Banks, the Federal Intermediate Credit Banks, the Banks of Cooperatives, the Federal Home Loan Banks, and the Federal National Mortgage Association have well-established secondary markets. Dealers' inventories usually include large amounts of these securities. The spread between the bid and offered prices is narrow on short-term issues of these agencies, and trades of $1.0 to $5.0 million can generally be made without upsetting the market.

The secondary market for issues due in five or more years is a different story. Long-term maturities are usually available in comparatively small amounts, and the spread between bid and offered price is often as large as one dollar per hundred of face amount. Consequently, when new issues have been placed with investors, the secondary market has been able to give only a rough indication of the issues' current value. Actual trades, particularly of large amounts, are often negotiated on an individual basis.

In December 1966 the Federal Open Market Committee, pursuant to an Act of Congress, authorized the use of repurchase agreements involving agency obligations in its open market operations. These agreements are similar to those involving direct obligations of the United States insofar as terms and conditions are concerned. In August 1971 the Committee voted to conduct outright transactions in Federal agency securities. These developments not only increased the means available to the System for supplying and absorbing reserves but also tended to strengthen and broaden the secondary market for agencies.

Secondary sales of securities of smaller agencies are arranged in various ways. In the case of Farmers Home Administration notes, at least one dealer has made a special effort to provide a secondary market by "packaging" notes of smaller denominations into larger units for large investors.

Secondary market activity in agency issues has kept pace with the growth in the outstanding supply of agency debt. Daily average gross dealer transactions in agency securities grew steadily over the last decade from $140 million in 1965 to $1,043 million in 1975. About 37

percent of the 1975 dealer transactions were accounted for by issues maturing within one year. Daily average dealer positions in agency securities rose over the same period, although more erratically, from $337 million in 1965 to $939 million in 1975. Reflecting the relatively greater growth of longer-term agency issues, the percentage of dealer positions represented by issues maturing in less than a year declined from 69 percent in 1965 to 47 percent in 1975.

DEMAND

Agency issues have many desirable features; in particular, they have a very low degree of default risk and in many cases have well-developed secondary markets. It is not surprising, therefore, that the demand for them is broadly based. In fact, they are close substitutes for U.S. Government securities and, like U.S. securities, are held by virtually all sectors of the economy. A precise breakdown of relative shares is difficult, since in the Treasury's Survey of Ownership over half of the total outstanding are included in the residual "all other" category, which includes individuals, commercial bank trust departments, and all other institutions not covered by the Survey. Undoubtedly individuals hold a significant share. Among the reporting categories, the largest holder of agency issues throughout the history of the Survey has been commercial banks, which held 20.0 percent of the total as of June 1976. Next in line at that time were U.S. Government accounts and Federal Reserve Banks with 8.9 percent and state and local governments (including general and pension funds) with 7.0 percent.

The spectacular growth in Federal agency financing over the past decade emerges as the salient factor in the agency market. The growth of the Farm Credit System, FNMA, and the FHLB has been particularly rapid. The outstanding debt of the Farm Credit System rose $23.9 billion from 1965 to mid-1976. Over the same period the outstanding debt of FNMA and the FHLB rose $43.7 billion. The growth in the debt of these two agencies reflected their attempt to cushion the impact of rising interest rates on the residential mortgage market. In 1969, 1973, and 1974, three years in which the mortgage market was adversely affected by rising interest rates, these two agencies together raised $8.0 billion, $12.9 billion, and $12.2 billion of new funds.

The boom in agency financing has undoubtedly contributed to a broader and more active secondary market, thereby increasing the marketability of many agency issues. The average differentials between agency and U.S. Government short-term yields were 15 to 30 basis points

in 1975 and 1976, lower than in most previous years. These relatively low differentials could reflect the enhanced marketability of agency issues, although it is difficult to say for sure since the relative yields on agencies and U.S. Governments also may be affected by other factors such as relative supplies. An unusually large supply of new U.S. Government debt was sold in 1975 and 1976 while the supply of new agency debt was quite moderate.

The Euro-Dollar Market

by Aubrey N. Snellings

The last two decades have witnessed the growth and development of an international money market which effectively links together national money markets in the world's major countries. This market is often referred to as the "Euro-currency" market, but this term is imprecise because non-European countries, notably Canada, Japan, and the Caribbean countries, are quite important in the market. This brief article is concerned primarily with the foreign market in United States dollars, i.e., Euro-dollars, which make up about 75 to 80 percent of the broader market in foreign currencies.

WHAT ARE EURO-DOLLARS?

In the simplest terms, Euro-dollars are deposits, denominated in U. S. dollars, placed with banks outside the United States, including deposits at foreign branches of U. S. banks. Euro-dollar deposits arise when the owner of a demand deposit at a U. S. bank transfers ownership of that deposit to a foreign bank in exchange for a dollar-denominated deposit claim against the foreign bank. Euro-dollar deposits may be made by individuals, corporations, or other nonbanking institutions who may be depositing dollars acquired through a current or capital transaction already denominated in dollars or through purchase of dollars in the foreign exchange market. Other commercial banks may deposit funds obtained in the foreign exchange market or from the central bank, or they may redeposit funds obtained from other participants in the Euro-dollar market. Some deposits of central bank funds are made directly by the central bank, others indirectly through the Bank for International Settlements. Euro-dollar deposits usually take the form of a time deposit, but overnight and call deposits are also made. The foreign bank receiving the deposit may lend the dollars to another foreign bank, to a bank in the United States, to a nonbank abroad such as an importer, or to a U. S. company.

Trading in the Euro-dollar market may involve substantial pyramiding of Euro-dollar deposits. For example, a European bank holding a deposit in a U. S. bank may make a Euro-dollar deposit with another European bank, which in turn may deposit the proceeds with another bank, and so on. Each redeposit transfers ownership of the original

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deposit at the United States bank, and the transfer process could, of course, shift the deposit to another United States bank. Each such redeposit creates new Euro-dollar deposit liabilities on the books of the foreign bank involved, and the total Euro-dollars thus created may be several times the amount of the original claim on the United States bank. Of course, if these additional liabilities created simply represent a succession of interbank deposits, they do not expand the supply of credit to the nonbank public.

ORIGINS OF THE MARKET

The acceptance of deposits denominated in foreign currencies is a practice of long standing, but the Euro-dollar market as presently constituted goes back no earlier than the late 1950's. Some writers trace its beginnings to the early 1950's, when banks in Eastern Europe held dollar deposits with banks in Western Europe in preference to deposits in U. S. banks. The functioning of the market on its present scale, however, requires the free flow of short-term funds from country to country. This requirement became possible for the first time in 1958, when the major European countries, who had by then accumulated substantial reserves arising from U. S. balance of payments deficits, made their currencies freely convertible into the dollar. A second important development, which occurred a few months prior to the restoration of currency convertibility, was the imposition of restrictions by the British Government on the use of sterling to finance trade between nonresidents. These restrictions helped to stimulate use of dollar loans to foreigners by the British banking industry.

GROWTH OF THE MARKET

Precise data on the growth and size of the Euro-dollar market are not available. In recent years, however, the Bank for International Settlements has estimated the dimensions of the Euro-dollar and Euro-currency markets on the basis of reported foreign currency positions of banks located in eight European countries, Japan, and Canada.

The chart on page 97 is based on Bank for International Settlements data. In some respects, these data overstate the size of the Euro-dollar market. Some of the assets and liabilities shown arose out of the pyramiding of deposits described above and thus overstate the amount of dollars available to nonbank borrowers. Some liabilities arose out of the use of credit lines with United States banks, while some assets represent normal working balances in United States banks that are not available for trading in the Euro-dollar market. On the other hand, the data do not

reflect the dollar positions of these banks toward residents of their own countries and thus omit a substantial amount of dollars that are available to the market.

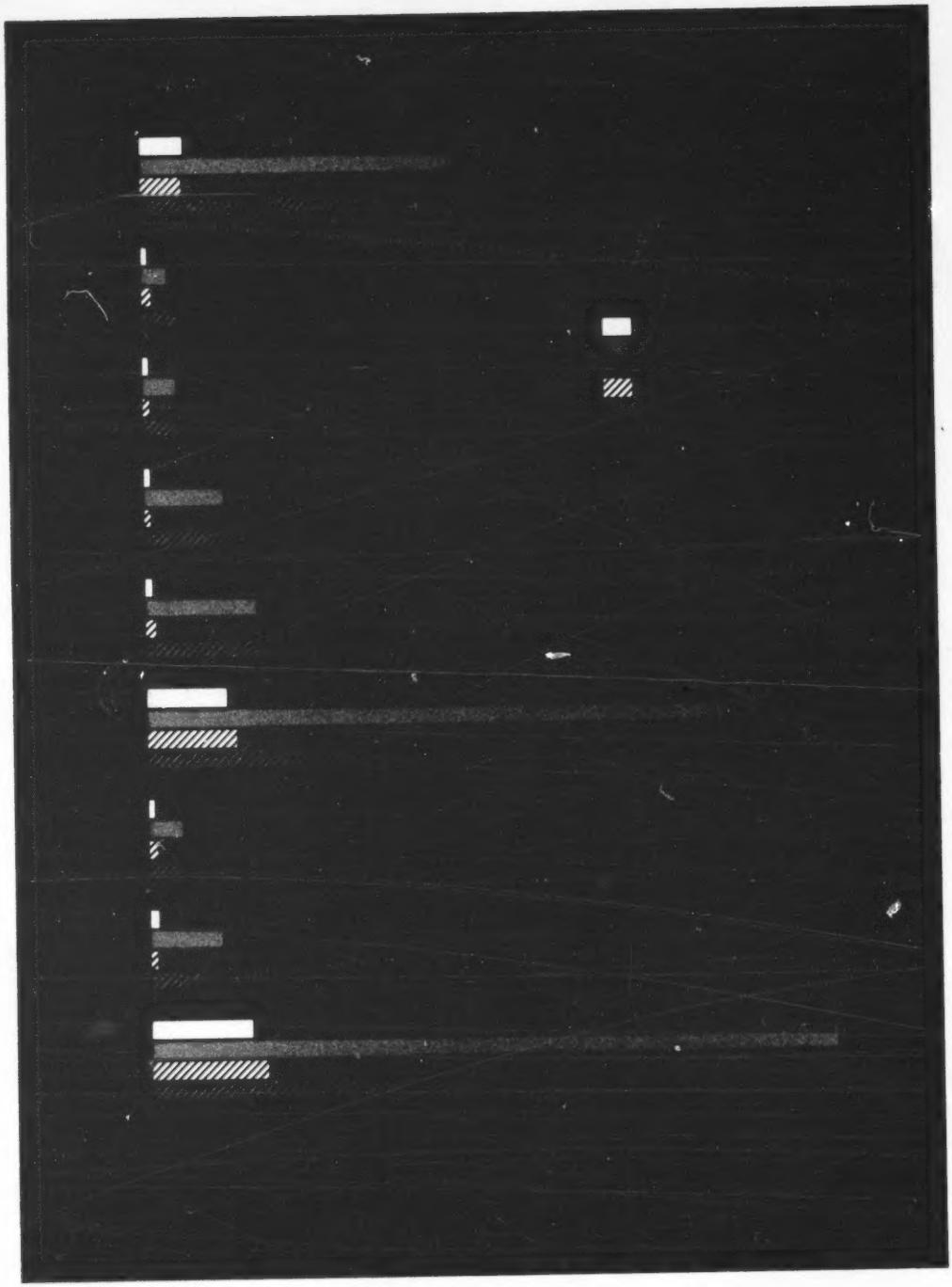
On the basis of such data, it is possible to estimate the approximate size of the Euro-dollar market. The growth of the market has been spectacular. According to the Bank for International Settlements estimates, dollar liabilities of commercial banks in the eight reporting European countries to non-residents grew from $26.9 billion at the end of 1968 to $151.7 billion in mid-1974. By then, however, certain developments had created an atmosphere of apprehension in the Euro-dollar market. The quadrupling of oil prices in late 1973 resulted in large balance of payments deficits for some countries that were borrowers in the Euro-dollar market, causing some doubt as to the quality of loans made to these countries. Also a few banks in the Euro-dollar market experienced large losses related to foreign exchange transactions. When foreign exchange losses led to the closing of a relatively small German bank, confidence in the Euro-dollar market was weakened, resulting in a highly unusual contraction in interbank deposits and gross Euro-dollar liabilities.

The events of 1974 led to widespread speculation about the future health of the Euro-dollar market. By early 1975, however, confidence in the Euro-dollar market had improved markedly, in part because of assurances in late 1974 from the Group of Ten central-bank Governors confirming their willingness to provide liquidity if needed for international banking and foreign currency operations of their respective countries. In any case, rapid growth in the Euro-dollar market resumed, and by the end of 1975 the dollar liabilities of commercial banks in the eight European countries to non-residents had risen to $189.5 billion.

London is the heart of the Euro-dollar market. In December 1975, banks in the United Kingdom (including branches there of non-UK-owned banks) accounted for 55.0 percent of the dollar liabilities reported by banks in the eight reporting European countries and about 46.2 percent of the total of the ten reporting countries. The fastest growing center of Euro-dollar activity in the recent past has been the Caribbean area, which now represents the largest Euro-dollar center after London.

CONTRIBUTING FACTORS

Confidence in the United States dollar is essential to the existence of the Euro-dollar market, but other factors have contributed importantly



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to its growth. Among the most important are interest rate differentials between the United States and foreign markets and legal and institutional restrictions on the movement and use of funds.

Euro-dollar deposits are for the most part interest-bearing time deposits of relatively short maturity, although maturities may be extended to five years, and interest is also paid on call money. Banks seeking to raise funds in this market must pay rates on deposits that are competitive with those on instruments of comparable quality, liquidity, and maturity in United States money markets. Loan rates, on the other hand, must be competitive with rates charged on local currency loans and in United States financial markets. This results in narrower margins between Euro-dollar borrowing and lending rates than generally exist between dollar borrowing and lending rates at U.S. commercial banks.

The Euro-dollar market makes possible the avoidance of numerous restrictions on the uses of funds or on rates that may be charged. Banks in the United States, for example, are prohibited from paying interest on demand deposits, and the rates they can pay on some classes of time deposits are limited by Regulation Q. No such restrictions apply to Euro-dollar deposit rates, so it is advantageous to many holders of dollars to deposit them in banks outside the United States. Likewise, United States banks may solicit funds in the Euro-dollar market at rates not subject to ceiling restrictions. Thus, in periods of high interest rates in the United States, when Regulation Q interest rate ceilings caused large runoffs of certificates of deposits, U. S. banks could replace the lost funds by borrowing heavily from their foreign branches.

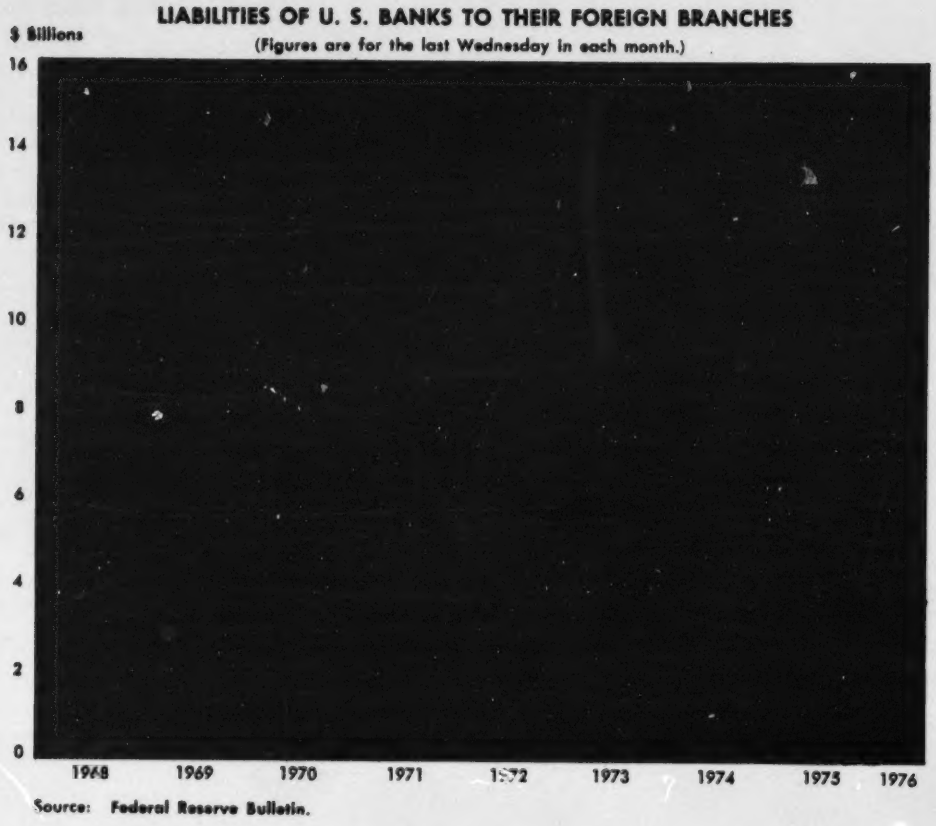
Another set of restrictions that influenced the growth of the Euro-dollar market consisted of controls on capital outflows initiated by the U.S. Government in an attempt to repress its chronic balance of payments deficits. These programs, started in the mid-1960's, included the Interest Equalization Tax, which lowered the effective yield to U. S. investors on foreign securities; the Voluntary Foreign Credit Restraint Program, which set "guidelines" on foreign short-term bank loans; and the Foreign Direct Investment Program, which placed controls on new capital investments abroad by U. S. corporations financed with foreign earnings or dollars acquired in the United States. These programs diminished the ability of foreign subsidiaries of U. S. corporations and other borrowers to obtain funds in the United States, thereby stimulating demand for Euro-dollar loans and spurring growth of the market. All of these programs were terminated in January 1974.

IMPLICATIONS OF THE MARKET

The Euro-currency market is in a continuing state of evolution. Since the mid-1950's it has grown from a quite limited market in United States dollars into a worldwide market involving transactions in a number of major currencies. This evolution toward a truly international money market has important implications for national monetary conditions, balance of payments positions, and the management of the money position of large commercial banks.

One result has been the development of an international interest rate structure independent of the rate structure within any individual country. This has tended to reduce interest rate differentials between national money markets and to limit to some extent the ability of monetary policymakers to influence the level of rates within particular countries. The impact of Euro-dollar rates on the rate structure of a particular country, however, depends on the size of Euro-dollar flows relative to total financial flows and upon the effort made to insulate domestic credit markets from the effects of Euro-dollar operations. But if a central bank attempts to hold interest rates in a particular country above those in money markets in other major countries, or if commercial banks try to maintain artificially high rates through cartel arrangements, a sharp influx of Euro-currency funds into that country is likely to put downward pressures on domestic rates. Conversely, countries attempting to hold rates below those prevailing in the Euro-dollar market have experienced outflows of funds which put pressure on their international reserves.

In recent years, commercial banks have made increased use of the Euro-dollar market to adjust their liquidity positions, and central banks have used it to supplement monetary policy operations in domestic money markets. During the decade of the 1960's, U. S. commercial banks placed increasing emphasis on the management of their liquidity positions from the liability rather than from the asset side. To some extent their increasing reliance on the Euro-dollar market was a part of this general change in policy. But in times of monetary stringency, Regulation Q ceilings sometimes prevented banks from having recourse to U. S. money markets through CD's. At such times they offset the loss of money market funds by borrowing heavily in the Euro-dollar market. In 1966, for example, liabilities of U. S. banks to their foreign branches rose from $1.7 billion in January to $4.0 billion in December, and in 1969, when interest rates rose sharply, these liabilities increased $7.0 billion. This particular stimulus to Euro-dollar borrowing was eliminated when interest rate ceilings on large CD's were suspended in June 1970



for deposits with maturities of less than 90 days and in May 1973 when rate ceilings were suspended for CD's with longer maturities.

The individual bank may increase its legal reserves by borrowing in the Euro-dollar market because this draws reserves from other banks. Such borrowings, however, do not increase the reserves of the banking system as a whole. Until October 1969 banks were not required to hold legal reserves against liabilities to foreign branches. Thus, until that time the substitution of a liability to a foreign branch for a domestic deposit liability could be used to reduce the required reserves of the banking system and increase the loanable funds of the system. The attractiveness of Euro-dollar funds was sharply reduced in 1969, however, when the Federal Reserve imposed a 10 percent reserve requirement on lia-

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bilities to foreign branches in excess of a reserve-free base level and against borrowings from nonaffiliated foreign banks. This reserve requirement was raised to 20 percent in January 1971 and subsequently lowered to 8 percent in June 1973 and 4 percent in May 1975. The reserve-free base was eliminated in early 1974.

Periods of intense demand pressures in the Euro-dollar market have created special problems for central banks. To cite just one example, in 1966 heavy borrowings combined with year-end window dressing operations of European commercial banks put strong upward pressure on interest rates in the Euro-dollar market. Among other unfavorable results, these pressures threatened to pull funds out of sterling and to subject the spot sterling rate to intense pressure. To meet this situation, several European central banks, the Federal Reserve System, and the BIS took concerted action to relieve pressures in the Euro-dollar market. The Swiss National Bank, for example, bought spot dollars from commercial banks and sold them forward over the year-end. The dollars thus acquired were immediately channeled back into the Euro-dollar market. The BIS drew upon a $200 million swap line with the Federal Reserve and placed the dollars in the Euro-dollar market. The Netherlands Bank rechanneled funds into the market, while the German Federal Bank and the Bank of Italy took action to reduce the pullback of Euro-dollar placements by their banks.

Concerted action of this type by major central banks points up the growing recognition of the Euro-dollar market as an international money market. In addition, central banks have for some years used operations in the market to influence domestic monetary conditions. The German Federal Bank, for example, has at times offered dollar swap facilities to commercial banks on favorable terms to encourage the banks to place funds abroad and thus reduce domestic liquidity. The Bank of Italy has provided similar swap facilities to Italian banks. On the other hand, a central bank may add to domestic liquidity by encouraging commercial banks to draw funds from the Euro-dollar market and convert them into the local currency. These operations in the Euro-dollar market, therefore, are quite similar in effect to central bank open market operations.